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# STAGE ILLUSIONS AND ENTERTAINMENTS

WITH 161 ILLUSTRATIONS

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## EDITOR'S PREFACE

THIS Handbook is unique in its way. It endeavours to explain the work of the amateur stage carpenter and scene-painter ; it gives instruction on producing various stage noises and effects, has a well-illustrated chapter on the art of theatrical make-up, and, in addition, reveals the secret of black art or Oriental magic. It is also a detailed guide to the making and manipulation of manikins or marionettes, and shows how to build and manage a living marionette theatre and how to make ventriloquial dolls. Novelty entertainments, such as rag pictures, etc., and paper manipulations are the subjects of special chapters ; and the final feature is one for which many demands have been made—full instruction on the making and working of a Punch-and-Judy Show.

It is hoped that both the amateur and professional entertainer will find in the pages of this book much solid information of a thoroughly helpful nature.

It should be said that a very large part of this book is from the pen of "Prof. Levani."

THE EDITOR,  
"WORK."

*La Belle Sauvage,*  
*London, E.C.4.*

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# STAGE ILLUSIONS AND ENTERTAINMENTS

## CHAPTER I

### Amateur Stage Building

**An Easily-made Stage for Home Theatricals.**—The stage described in this chapter is intended for tem-

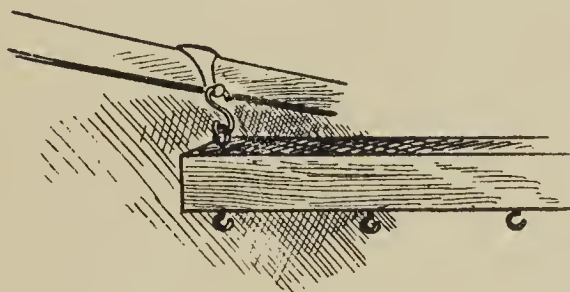


Fig. 1.—Suspension of Cross-piece.

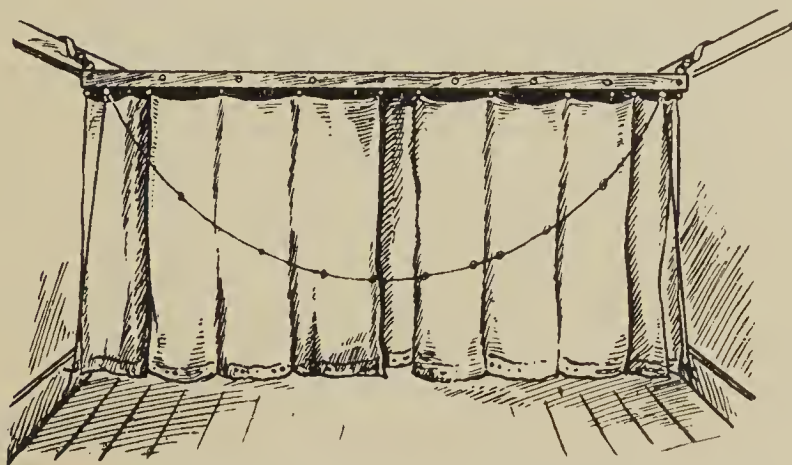


Fig. 2.—Easily-made Stage for Home Theatricals.

porary use in a room which would be too small to permit of the erection of a stage of any pretensions or

of a permanent nature. A piece of wood as long as the room is wide and approximately 2 in. by 1½ in. thick is suspended at each end, in the manner shown in Fig. 1.

It will be seen that the suspension in this case is by means of a hook slipped over the picture rail, but in the absence of the latter, a suitable hook can be driven into the wall between the bricks, the correct position being previously found by means of a fine bradawl. A large screw-eye is driven into each end of the wood, and connected to the picture hooks by ordinary meat hooks. On the under-side of the wood are a series of small hooks. Curtains are hung on these hooks in the following manner: On each side is hung a curtain about 2 ft. to 3 ft. wide. These two curtains with the top curtain, which is hooked at the back of the wood and hangs over the front, form the proscenium. The drop curtains, which part at the centre and draw up in the usual manner, are hooked to the wood in the same way as the side curtains, that is, on the under-side of the wood. They are drawn up by strings on each side, which run through rings, sewn at intervals on the back of the curtains, and finally through a screw-eye fixed at each end of the wood on the under-side.

When drawn up the strings should be fastened to a small hook driven into the wainscoting of the room. Care should be taken that the drop curtains overlap at the centre, and extend some distance behind the side curtains, to ensure no view of the interior of the



stage being seen, until the curtains are drawn. Fig. 2 shows the view of the stage at the back, and the manner in which the curtains are hung and drawn up. The curtains should be of a dark-hued curtain cloth.

**An Extensible and Portable Stage.** — The stage shown by Fig. 3 has been designed to render it

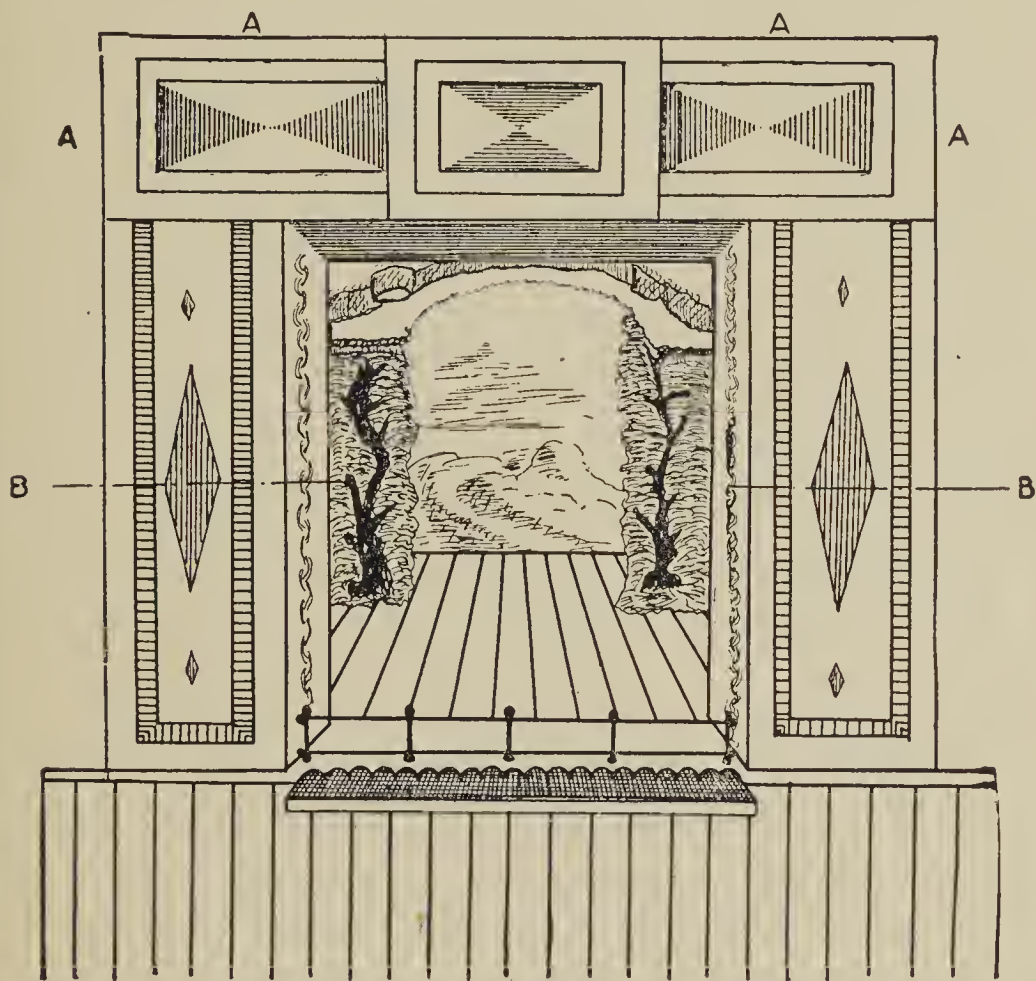


Fig. 3.—Front of Portable Stage.

suitable for large or small halls, inasmuch as when arranged for its smallest dimensions, it would occupy a space 12 ft. square ; but it is also capable of being extended to the size of 24 ft. by 20 ft., which is probably as large as a stage of a portable nature is likely to be required.

The first part of the work would be to lay the stage. This should be solid and strong, and on this account the joists and all the supports must not be less than 4 in. by 3 in. The height at the front should be 3 ft. 6 in., and the floor must rise  $\frac{1}{2}$  in. in every foot towards the back. Each row of supports, therefore, will require to be  $1\frac{1}{2}$  in. higher than the row in front. If the stage were extended to its full depth, it would be 10 in. higher at the back than the front.

Fig. 4 shows the underwork as it would appear looked down upon from the front. In this figure A is the front of the stage, and the positions of the cross pieces are shown. These are 12 ft. long, and each has four supports, each 3 ft. 2 in. high; there is one support at each end and one 3 ft. from each end. The middle strut is one of the supports of the centre beam, 3 (Fig. 4). When fixing the stage, this would be the first to put up; 1, 2, 3, 4 and 5 are placed over 3, each 3 ft. apart, and the whole firmly bolted together with carriage bolts, the joints being strengthened by means of metal plates (*see* A, B, Fig. 5). It will be seen that these trestles are double, and if one be drawn 3 ft. one way, and the other the same distance the other way a stage 18 ft. wide would result (*see* Fig. 6). This would bring the supports C D close to the centre. If it was desired to make the stage wider still, it is obvious that supports C and D would not pass the centre one, therefore, they would have to be taken off and shifted, and when the trestles were drawn out as far as required, would have to be put back again,

dividing the spaces equally (*see* Fig. 6). The stage would now be 23 ft. wide. This would be ample for any likely requirement, but if the room were wider than that, a curtain would be hung on each side to close in the intervening space.

Ten to fourteen trestles would be required if the stage was to be larger than 12 ft. square, but if the stage was to be only 12 ft. square, five trestles would do. Should the stage be opened to its fullest extent, the two back trestles would be 4 ft. apart, instead of 3 ft. as the others, thus adding 8 ft. on to the 12 ft.,

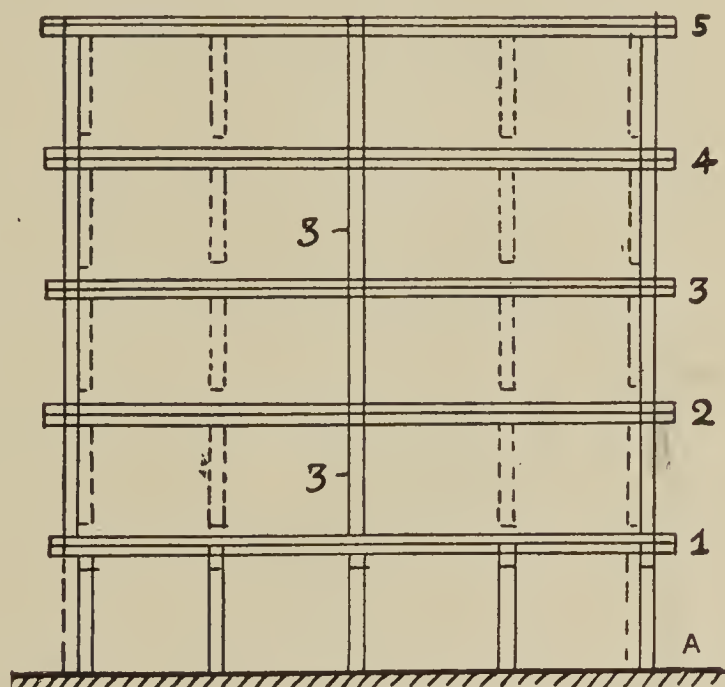


Fig. 4.—Underwork of Stage.

making the stage 20 ft. deep. This difference in the width of the trestles would not matter as far as strength is concerned, as the back of the stage is not used so much as the front and centre.

For the floor, 1 in. floor-boards which generally are about six to eight inches wide should be used. Saw them into 6 ft. lengths; take six of them, lay them side by side and place two cross pieces (A and B, Fig. 7)  $3\frac{1}{2}$  in. from each end and screw these together with  $1\frac{1}{2}$  in. screws, two for each board. The piece, when



finished, would be 6 ft. by about 3 ft.. If this piece is now laid on the trestles, it should fit so that the two cross pieces A and B, are inside the trestles—that is, the edges of the boards should rest on the trestles, each piece of flooring butting the next closely. This is an important point, because on its fitting depends the rigidity of the stage. For a 12-ft. stage four of these

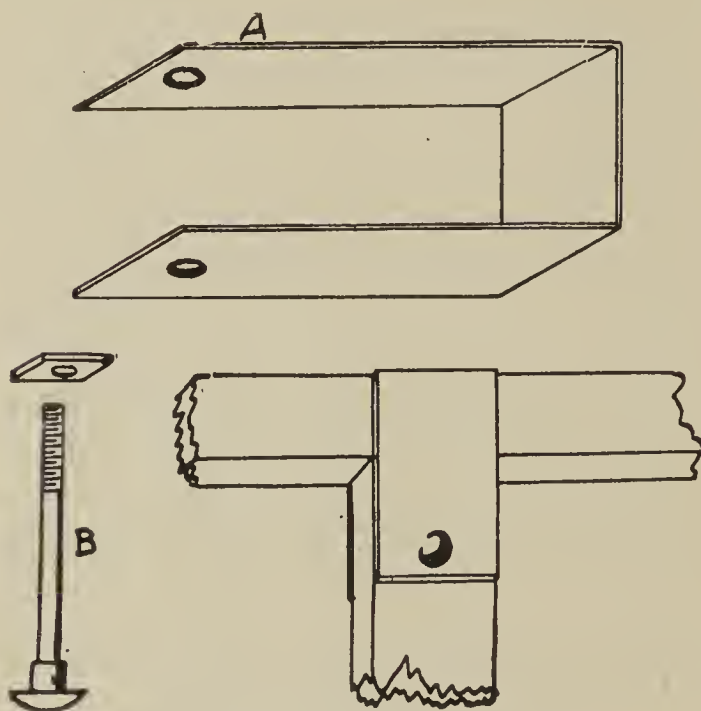


Fig. 5.—Plates for Strengthening Joints.

pieces would fill the front half and four the back half — eight altogether. If the stage is made 3 ft. wider two more will be required, and so on, fourteen such pieces being necessary for the full stage of 24 ft.

The two back rows would only have to be 4 ft. lengths, made the same way as the others, so that the stage may be made 4 ft. or 8 ft. deeper.

Having the stage fixed, the next matter is the fitting of the framework to carry the proscenium and scenery, etc. The four principal uprights should be 3 in. square, and the two top beams 5 in. by 3 in. (see Fig. 8). The two uprights should be divided into two pieces of about 10 ft. long each. These should work



telescope fashion, by having two clamps with a bolt and nut through both posts, holes being bored through the top piece about every foot or nine inches. This top piece will slide up or down, according to the height

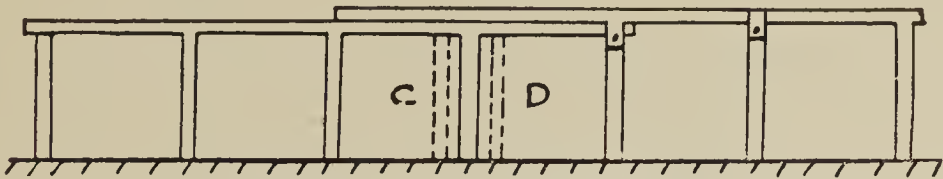


Fig. 6.—Diagram Showing Method of Extending Stage.

it is desired to have the proscenium. In Fig. 8, A and B are the clamps and c the bolts. The top beam, C O, is worked the same way, and the pieces for it are 12 ft. each in length.

The telescopic system is applicable to both sides and top of the proscenium, and should be adopted in the way about to be described.

In the first place, make four pieces of framework, 8 ft. high and 2 ft. 6 in. wide. Two of these frames are to work behind the other two, so that they may be lifted up. Should it be required to make the proscenium higher, the back pieces may be raised 3 ft. or 7 ft., bringing the top of the proscenium to a height of nearly 20 ft. (see Fig. 9). A bolt on each side of the framework will keep all secure.

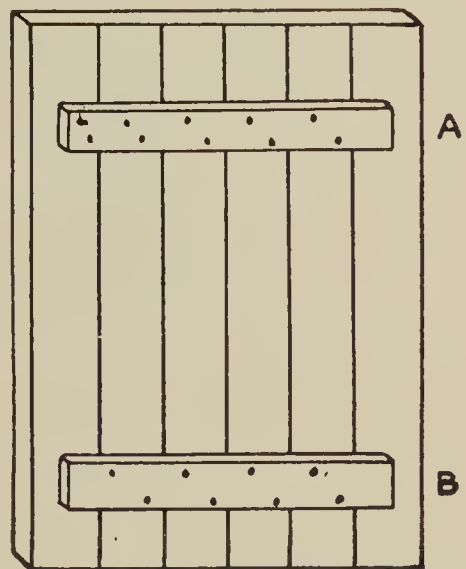


Fig. 7.—Method of Battening Flooring.

The top can now be made, and this must be in



panel and the two side pieces, drawn out as required, will form two panels (*see* Fig. 7).

Sometimes return pieces are made to the proscenium, about 12 in. or 14 in. wide (*see* B, Fig. 9). These are made in the same way as the sides and top. The top piece, when fixed, slopes inwards and the two side pieces stand obliquely as shown. Pieces of

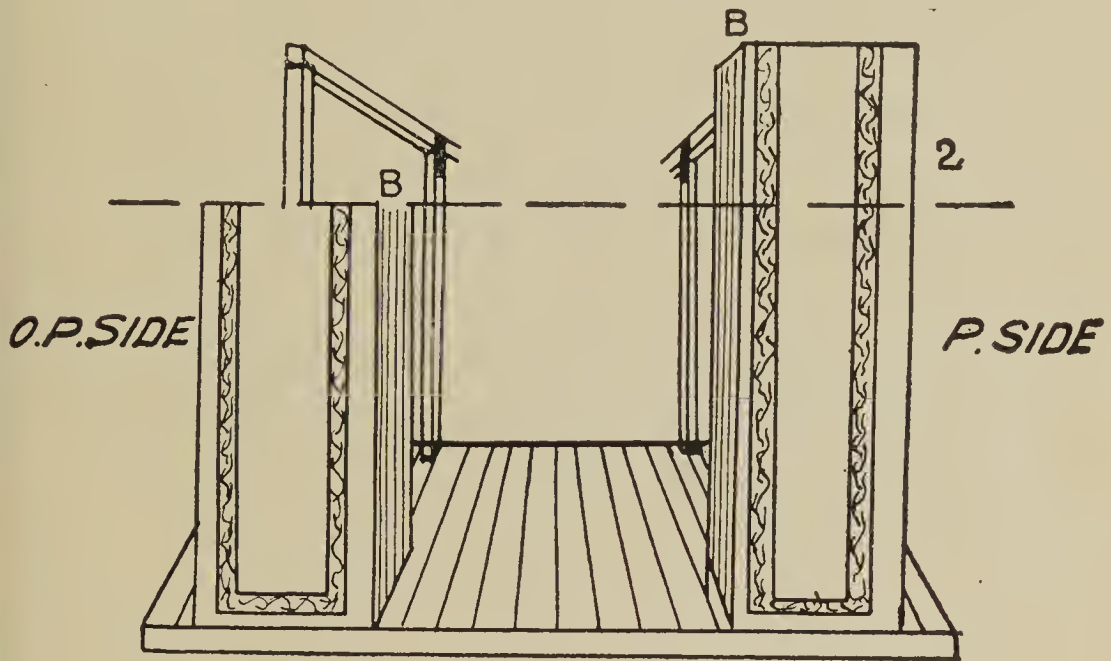


Fig. 9.—Proscenium.

wood, about 1 ft. long and 2 in. by  $1\frac{1}{2}$  in. square can be screwed to the stage, and the sides can be fastened to them (*see* J, Fig. 8). The return pieces may be painted as panels or columns.

The drawing (Fig. 8) shows the supporting framework of the whole of the scenery, proscenium, etc., and it will be understood that it is essential that it should be strong and well put together. The O.P. side shows only the two uprights and cross-beam, clamped and bolted together at E E, and fastened to

the stage by a bracket similar to that shown at F while on the P side the framework is raised up 3 ft. making the proscenium front higher, the clamps A and B, keeping them as one solid piece, the bolt C being moved according to the height desired. The dotted lines show the position of upright H when moved to make the stage larger. It will now be seen that if the top beam is in two 12 ft. lengths, when fully drawn out to 20 ft. there will be 4 ft. of double thickness in the middle, and this will prevent them bending to any extent. The dotted line D D is a piece of stout quartering fixed across the front, carrying the top of the proscenium. The dotted line K K shows the 6 ft. lengths of flooring, and their divisions across the stage.

The complete stage B B is shown by Fig. 3, the line B B indicating the two parts.

## CHAPTER II

### General Stage Carpentry

**Rollers.**—Rollers for prosceniums and scenes may be made in three or four ways. The simplest type is, of course, the solid roller, but on account of weight this can be only used for the smallest canvases, and a cloth about 15 ft. by 12 ft. would be the maximum.

*Solid Rollers.*—In making a roller from the solid, choose a piece of timber that is dry, straight and is free from knots as possible, about  $3\frac{1}{2}$  in. or 4 in. square. First plane off the four corners which will make it octagonal in shape, after which continue planing the corners until a round surface results. Rub it over with a piece of coarse glasspaper, and the roller is finished. The cloth or scene is simply tacked to it, taking care that the edge of the cloth and the roller are in perfect alignment. It will be best to draw a line on the roller as a guide for the position of the cloth. Another method of mounting the cloth is to saw the roller straight down and place the cloth between the two sections (see Fig. 10), tacking it on the face of one.

The sections may be held together with a few



screws, taking care that the heads of the screws are a little below the surface. The holes may be afterwards filled in with a little hard stopping made of glue and whiting.

*Built-up Rollers.*—The other kinds of rollers are the built-up type. When a roller reaches the dimensions of more than 3 in. or 4 in. in diameter, and, say,

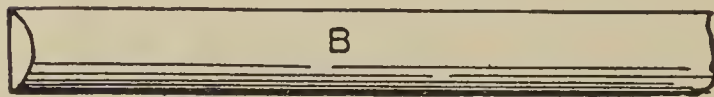
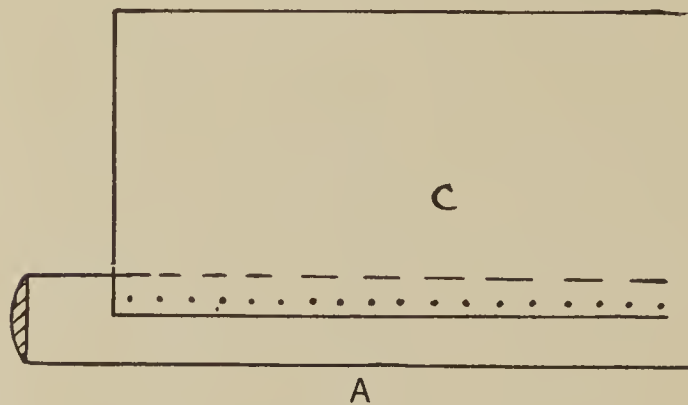


Fig. 10.—Method of Attaching Cloth to Proscenium Roller.

15 ft., or 18 ft. long, it must be made hollow in order to reduce weight. Probably the simplest method of making a built-up roller of, say, 6 in. diameter, is first to obtain a piece of timber about 5 in.

square and 4 ft. or 5 ft. long; the four corners of this are planed off, making it octagonal in shape. It should then be sawn into pieces about 6 in. long. These are the cores upon which to build the roller. Sixteen battens are now required, and two edges of each are bevelled with the plane, making them somewhat wedge-shaped (see Fig. 11). When all are bevelled, cut four in half which provides eight 6 ft. and eight 12 ft. lengths. Take first a 12 ft. length; divide this equally to take five of the cores (see Fig. 12), taking care to have the

one at the end (A, Fig. 12) divided in half, so that the next length will resist on the other half to butt or slope against the 12 ft. length referred to. This would be a 6 ft. length. Put a touch of glue between the cores and the battens, and nail them down with  $1\frac{1}{2}$  in. nails. If the building is now continued, alternately placing a

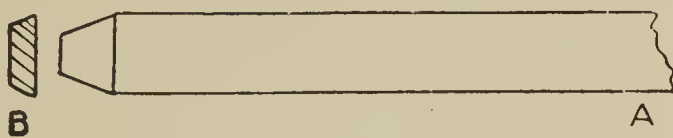


Fig. 11.

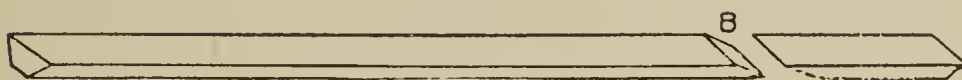


Fig. 12

Figs. 11 and 12.—Method of Making a Built-up Roller.

2 ft. length alongside the 6 ft., and a 6 ft. by the side of a 12 ft. length, the joints of adjacent lengths will not be in the same place. When all the lengths are together the roller will be 18 ft. long. The corners have to be planed off now in the ordinary manner. Remember, when nailing, to put the nails in the centre of the batten, or it will not be possible to plane them to the correct shape.

When it has been worked round it will require covering. Cut some strips of canvas, about 2 in. wide and 6 ft. long. Commence at one end of the roller by first well gluing the roller all round for about 18 in. ; take a strip of canvas, hold it in a slanting direction, and roll it round, just allowing the canvas to touch the edge of each turn. When the canvas has covered the glued portion, glue another length and proceed as before. When the roller is entirely covered, rub it down with a wet rag.

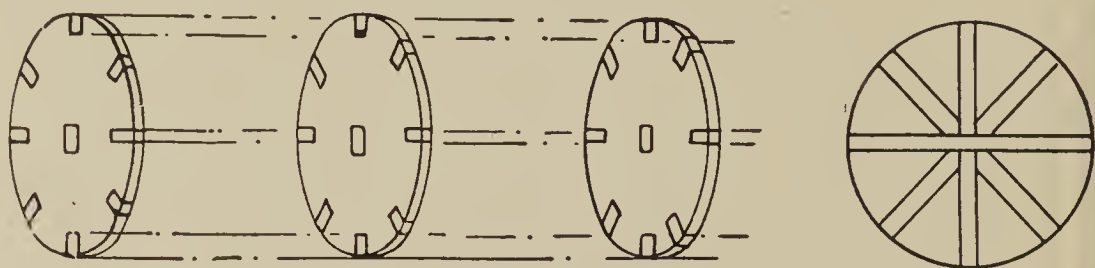


Fig. 13.—Another Method of Making Built-up Rollers.

Another method of making rollers is the same as that employed for making columns for large buildings on the stage ; either interior or exterior, which must be light in structure, one man often having to carry one on and off the stage when the scene has to be shifted quickly. The first thing is to prepare the cores, the diameter of which will depend on the ultimate size that the roller is required to be. Supposing a roller 9 in. in diameter is required ; cut a circle of wood 9 in. in diameter and 1 in. thick. This is the solid core. Strike another circle on the core, 1 in. from the edge (see Fig. 13). Now divide the core into as many parts as it is desired the skeleton should be made—that is,



as many battens as are necessary to form the circle to carry the cloth, and draw a 1 in. square at each division. At the corner of each square, bore a hole either with a gimlet or centre-bit, and then cut out all the squares. These square-cut holes are to receive the inch square battens (see dotted lines, Fig. 13). A more piece will be necessary about every two or three feet, according to the size of the roller. In putting the roller together the battens are divided as in making the second roller, and where they join they should preferably be dovetailed together. A square hole is made in the centre of the core for the purpose of passing a batten through the whole of the cores. In putting the battens into the cores, use glue and fine  $\frac{1}{2}$  in. nails.

The skeleton is now ready for the outer covering of cardboard, this being bent round and tacked on, the whole being finally covered with canvas as previously explained.

**How to Rope a Roller.**—The manner in which a roller is roped is shown in Fig. 14. Supposing a cloth 18 ft. wide and 20 ft. high required fixing to the rafters. Forty-eight yards of rope and one double and one single block would be necessary. The ropes (Fig. 14) are attached to the roller and run through the blocks to the falls at D. When the cloth is right up, the ropes are fastened round a cleat fixed to any convenient spot opposite the cloth, and clear of the head. It is usual to have the cleats arranged in a row, when two or more cloths are hung close together.

The rope is attached to the roller either by a staple driven in the end of the roller at *EE* (the rope being passed through, and a firm knot tied in the end to prevent its slipping through), or the ends are secured with 1 in. clout nails. When the rope is fixed, it must be passed round the front of the roller, so that the part

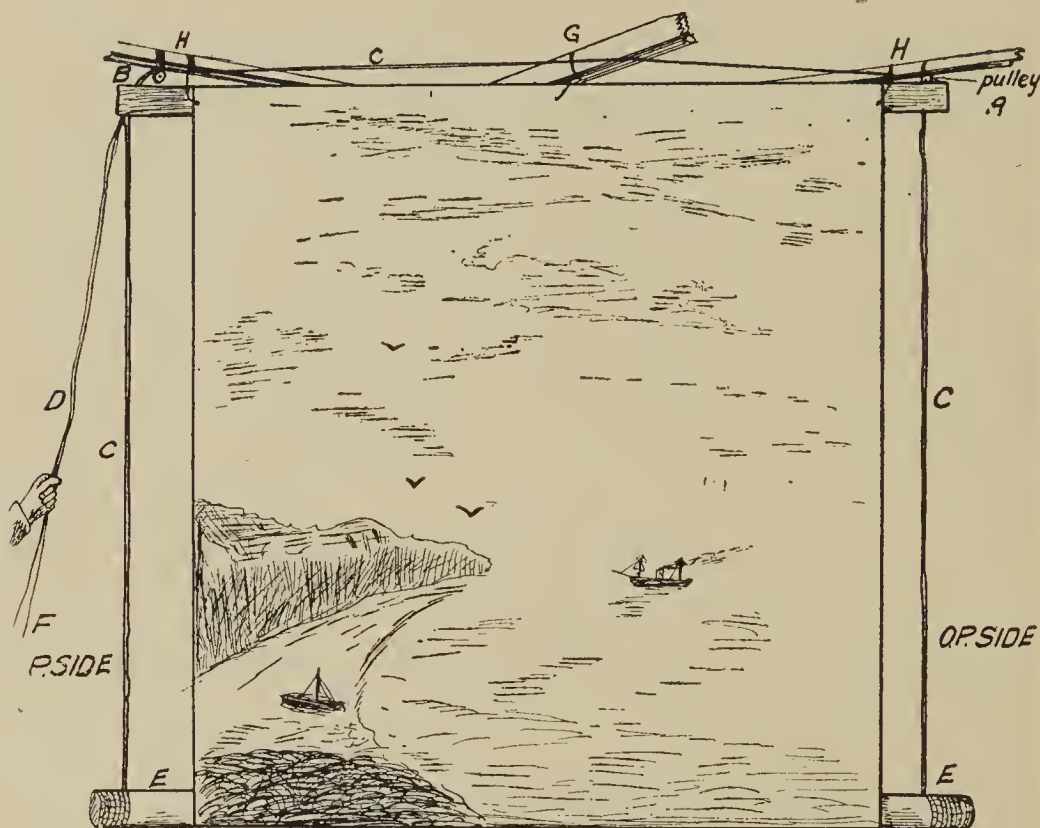


Fig. 14.—Method of Roping a Roller.

*C* is always at the back. First fasten at *E* O.P. side pass the other end through the single block *A*, taking it through the back sheaf of the double block, *B*; then pass the end through the front sheaf of block *B*, and fasten it on the roller, *E* at P. side. Put about fourteen turns round the roller at each end, and pull it up. When right up it should have two turns on. Cut the rope at *F*, which will obviate the ropes coiling, and

allow them to work correctly. In Fig. 14 G is the centre dead-line, helping to keep the cloth straight, and free from bagginess. H H are the two side dead-lines. The term "deadlines" means all lines that are fixed and do not work.

**Making Profile Boards.**—Profile is a thin board with canvas well glued down to it on both sides. When this is dry and hard it can be cut with a knife or saw into any form; such as the edges of wings in which it is wished to represent as foliage, rocks, etc., when a straightedge would be out of place.

*Boards for Profile.*—The boards required for this purpose are usually about  $\frac{1}{4}$  in. deal, and either 9 in. or 11 in. wide. The canvas required for covering must be a fairly open kind, that is, rather coarse in the web.

*Covering Boards with Canvas.*—The canvas must be cut a little less than the width of your boards, so as to allow for stretching when rubbing down, as it must not come beyond the edge of the board when finished.

The best way to prepare the glue is to have a small pail and break up the glue into it; place this in a large pail, put water into both, place them on the fire, and let them boil until all the glue is dissolved. The glue should be of the same consistency as castor-oil.

Lay the board on a bench or table, and take a large brush and well cover about 4 ft. of the board with glue at a time; lay the canvas on, well stretching it by rubbing from the centre towards the edges;

proceed in the same way until the board is covered. Now take a piece of canvas or rag, soak it in water, and after wringing it out, commence at the end and rub until the glue is brought through the canvas—that is, until it presents a soapy appearance. When one side is finished, turn the board over and go through the same process on the other side.

**Making Wings and Set Pieces.**—In the actual making of wings and set pieces from the prepared board, 3 in. battens are generally used for a framework. As an example, a wing 12 ft. high and 3 ft. wide would require two 12 ft. lengths and three 3 ft. lengths; the proper way to put them together would be with mortise-and-tenon joints, but if it should be that the “scenic artist” or stage carpenter is an amateur, the framework may be put together by halving. By using good glue and wire nails, say  $1\frac{1}{4}$  in. long, so that they will turn and clench, the wings will be quite as strong as if they were mortised and tenoned.

The profile may be easily cut with a knife or saw to the required shape.

**Borders, Ground Rows, etc.**—Borders are classed under several heads such as sky borders, tree, interior and drapery borders.

In making a border, the most particular thing is to have a good batten of sufficient strength to keep the canvas straight and flat; especially is this the case with sky borders. There should be no creases whatever.



**Practical Doors and Windows.**—Doors and windows are, of course, frequently painted, but there are occasions when actual use must be made of them, both in set pieces or in flats. A set piece is usually set from one of the wings. Flats, on the contrary, are two built pieces sent on from each side of the stage, meeting in the middle and buttoned or hooked together, forming one flat surface, similar to a cloth when rolled down.

The door or window in a set piece is made with a similar frame to the piece itself, and covered with canvas in the same manner. A clear  $\frac{1}{8}$  in. should be left all round, so that it may work easily. Use back-lap hinges ; those about  $1\frac{1}{2}$  in. or 2 in. will be found to be strong enough. There should be an india-rubber spring on the front of the door at the top corner, so as to ensure its closing after use.

**Vampires or Roll-outs.**—Doors, windows, or the walls of the house or set piece, such as garden walls, the trunks of trees, rocks—in fact anything made to open and close directly the actor in the scene has passed through—are termed vampires. A common example is that which permits of the actor jumping through a window from the stage and rolling back through the brick wall under the window. The “vampire” is usually made with two profile boards, hinged to a frame, each one having a rubber spring fixed on the inside which closes the vampire so quickly that the audience hardly see the working of it. In Fig. 15 is shown the back of a vampire ; the open part at the

top might represent a window, cupboard, pier-glass, clock-face—in fact it might be anything in which the clown will go through and roll out of the vampire, followed by policemen and others in quick succession.

In this figure A A are two small grooved wheels which work on pins. Holes are bored through at C, so that the trick-lines pass through these, being made

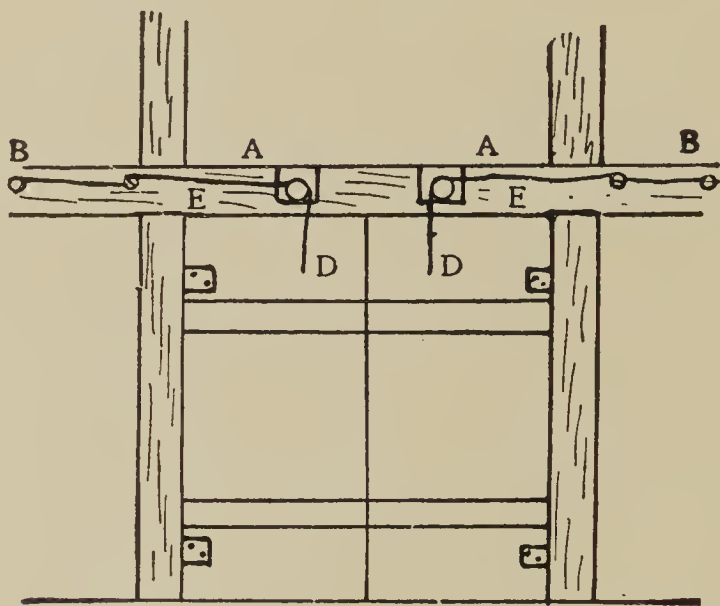


Fig. 15.—Back of Vampire.

fast to the two doors at D D ; a groove is cut out of the top of the framework at E E, so that the trick-lines may lie in it. The line is attached to the india-rubber springs, B B.

**Floor Traps.**—Traps in the floor of the stage are of another class, and are much more substantially built than those in the scenery. There are various kinds—slides and sinks, and grave, square and star traps—all of which should be provided for while the stage is in course of construction. The boards of stage

Floors are always laid from back to front, and the joists must be prepared according to the arrangement of the different traps required.

A grave or disappearing trap, which is usually about 5 ft. long and 2 ft. 6 in. wide, is formed by two flaps strongly hinged to both side joists, the trap opening through the middle. A lever of iron or hardwood working on a pivot underneath supports the two doors. When the lever is pulled round, the trap falls, allowing the person or object on it to drop through the middle into a convenient chamber below. The dotted position shows the lever pulled right round to withdraw the support from the trap. The trap automatically flies back into its place, the lever being put back at the same moment. Cords are attached to the four corners of each flap, and these pass round running wheels with weights attached—the weights, of course, not being so heavy as the object on the trap. When this trap is used to represent a pit or a grave in a play, the weights are detached.

A square or star trap is worked from below, the subject being shot up through the stage. Two stout uprights are fixed at each side of the trap, a piece of rope runs round a grooved wheel fixed in the centre of the top of the uprights, and one end of the rope is attached to the platform on which the subject stands, the other end having weights attached heavier than the person to be raised. The weights are supported by hanging levers H (Fig. 16), to which pieces of rope J are attached. When the signal is given, the ropes are

pulled, withdrawing the supports from the weights; which, falling rapidly, cause the trap to shoot upwards. The two flaps of the traps are pulled back into place by means of rubber springs. These traps, being fitted

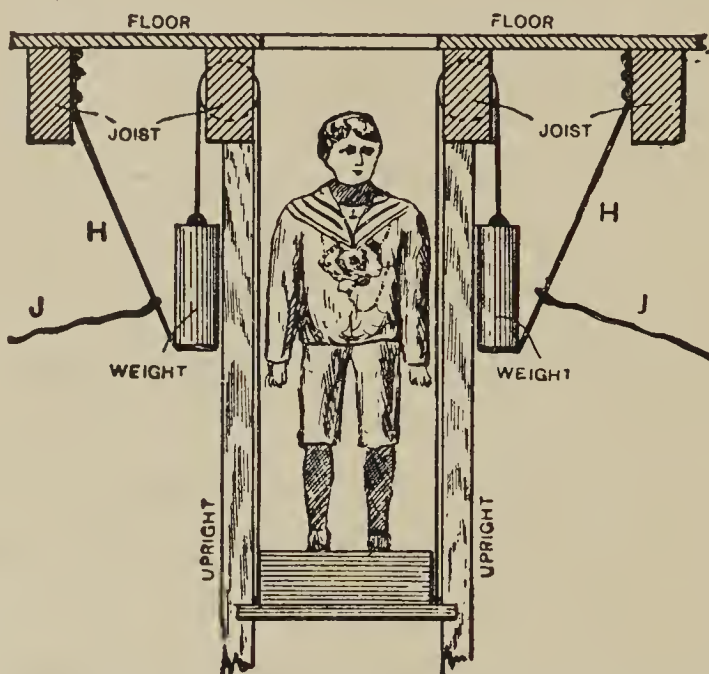


Fig. 16.—Diagram showing Principle of Floor Trap.

in a square frame, may be taken out of the stage when necessary. The star trap is of circular form, opening from the outer rim to the centre, but the principle of construction is the same as that just described.



## CHAPTER III

### Scene Painting

**Methods.**—When large scenes are being painted the artist does not paint them from a ladder or scaffold, but a special room or floor is provided, and the canvas, which is stretched on a frame, can be raised or lowered past this platform. This system requires a very large amount of space and special appliances not likely to be available except for professional work.

For amateur and small work generally, the simplest plan is to tack the canvas on to a wooden frame made of deal battens of about 3 in. wide and 1 in. thick. The frame may consist of the simple square or rectangle, though as a rule it is desirable to introduce cross pieces.

To tack the cloth on the frame, begin at the top left-hand corner, and drive the clout nails in, 18 in. apart, and only half-way home. This allows them to be easily drawn afterwards. Having done the top, work down the sides, and finish along the bottom, stretching the canvas tightly all the way.

Another method of supporting the canvas is on the principle of the roller towel. For the use of this method the room should be at least 2 ft. higher than

the size of the scene to be painted, and here it may be mentioned that a room which is not required for any other purpose should be selected, as, during the course of the work, much whiting and colour being used, splashes will be unavoidable. In the rafters, or a strong part of the ceiling, fix two pulleys on large strong screw-eyes at whatever distance apart may be required. Through each of these pass a strong line, which must reach to the floor, and be 2 ft. over. Tie the ends on to two battens the length of the scene, then tack the top end of the canvas on to the batten that will be pulled up to the ceiling, raise it aloft, and then tack the bottom edge on another batten. To reach the top of the scene—technically termed a “cloth”—pull the canvas down until the part to be worked on can be reached, and then the bottom portion will be found to have gone round and up the back as a roller towel does when worked.

**Colours.**—Theatrical scenery is not painted in oil; the weight of a scene painted in oils would be tremendous, and “quick changes” would be impossible. The medium employed is distemper—a mixture of size and water. With this medium the richness and depth of an oil painting, and the lightness and airiness of pastel may be obtained; moreover, it is possible to work quickly with it and it dries rapidly.

**Canvas.**—For professional work flax sheeting is generally used, but for ordinary work unbleached calico, obtainable from any draper, is quite suitable.

The material is to be sewn together so that the seams run horizontally.

**Brushes, etc.**—Similar brushes are used for scene painting as are used for oil painting; they differ in size according to the nature of the work. Other tools required are a straightedge about 36 in. long, a pair of large compasses 15 in. long, and a piece of charcoal attached to a stick for the preliminary sketching-in. The charcoal should be fixed on the end of a stick about 4 ft. long with two umbrella rings—*not* string.

The palette used, as a rule, is a large board with boxes running round three sides, and these, which generally number about eighteen, contain the colours. The board is painted white in oil so that the colour flows easily on it, and it may be simply cleaned by applying a wet sponge.

**Priming.**—Before the canvas can be painted it must be prepared. This is done by giving it a coat of priming, which is a mixture of whiting, size, and water. Size enables the colours to adhere to the canvas. Soak a pailful of whiting in water, and then mix with “half-and-half” size, that is, equal quantities of size and water, which will be found strong enough for ordinary priming purposes. The size is first melted down on a stove, and water is added as may be required. There are different concentrated sizes made, which may be bought in packets, but the skin size is less trouble and more easily prepared. Having prepared the priming, which should not be too thick,

go over the whole of the canvas with it, using a double tie brush, care being taken not to miss any portion of the ground. Priming need not necessarily be white, but can be any colour according to the style of work contemplated; many artists lay their canvases in a "smudge" colour, which is a mixture of all the odds and ends of waste colour.

**Preliminary Work.**—Before commencing to paint a scene the artist usually makes a small model. This is an exact replica of what the larger scene will be when finished. After the subject has been carefully thought out, the model is made to scale— $\frac{1}{2}$  in. to the foot being the usual proportion, as that is easy to reckon, besides keeping the model a reasonable size. Making a model enables the artist to ascertain exactly how the scene will appear, and he can alter the position of the wings, etc., until his judgment is satisfied, and thus save making any alterations in the larger stuff, which would be a rather serious matter.

The cloth proper will be divided into 2-ft. squares and this is done by means of a line and charcoal, as already explained. The model or sketch should also be divided into proportionate squares, so that measurements may be taken from the one to the other.

It is now a simple matter to make a drawing with the charcoal stick on the canvas from the design on the model, copying it into corresponding squares.

The medium for the colours is the same as for priming. A basin of warm water will be found useful for cleansing any brush for use with another colour.



are should be taken to work as cleanly as possible and not to prepare more colour than is necessary.

It must be remembered that in distempering the colours *dry six shades lighter than they appear when put on wet*. At first this will be found to be rather confusing, but the beginner will get used to it with practice. It is necessary to use broad effects, broader than those employed in picture painting, on account of the distance from which the work is seen.

The charcoal outline should first be gone over with a dark colour mixed with half-and-half size. This will show faintly through the colours laid on it and enable the original drawing to be followed, and the half-and-half size prevents it "rubbing up." The sky should be put in next, and it should be remembered that where extensive surfaces are required to be of uniform tint, it is necessary to mix the tint in large quantities. Of course, in the case of elaborate designs, the palette will have to be resorted to as well. The colours will be mixed with "working size"—that is, 5 parts of water to 1 part of size. Having tested the colours by drying them on little pieces of paper, begin at the top of the cloth, and lay the canvas in with the deep tint to a depth of about 1 ft. ; then the next 2 ft. 6 in. with the middle, and finish with the light tint. These must be carefully blended together so that no evidences remain of their juncture. The beginner will find this somewhat difficult at first, but he must not despair. Clouds are painted in the spaces left untouched by the sky

colour and blended into the same where necessary. The distance is then painted in, working from the palette, then the middle distance, then the foreground.

**Painting a Street Scene.**—As an example of the method of procedure, Fig. 17 is a design for a street scene. The sky should be painted a flat blue tint with or without clouds, and the road in yellows, greys and browns. The stones in the road should be shown only in the foreground. The buildings should be done in greys, yellows, and reds, and the pavement should be of a greyer tint than the road. In painting this scene commence with the sky, working downwards, and finishing with the ground. Then paint the buildings with a flat and broad wash of colour in their respective tones, and when those are dry finish the windows, lamp-posts, pavement, etc. Figs. 18 and 19 are the side wings. Fig. 18 should be greyish white in colour, and Fig. 19 of a dull leaded tone with black letters, or bright yellow, in imitation of gold, on the fascia.

**Interiors.**—When representing interiors, be very careful with the perspective, particularly in the case of borders. Although a border may be hanging down, it may be made to appear flat by attending to the perspective (*see* Fig. 20, representing an old ceiling with oaken beams and plaster between them).

**Draperies.**—The amateur scenic artist will find the drawing-in of draperies difficult at first. The best way is to have a cloth or curtain as a model, and hang it in the position it is desired to represent the



Fig. 18.

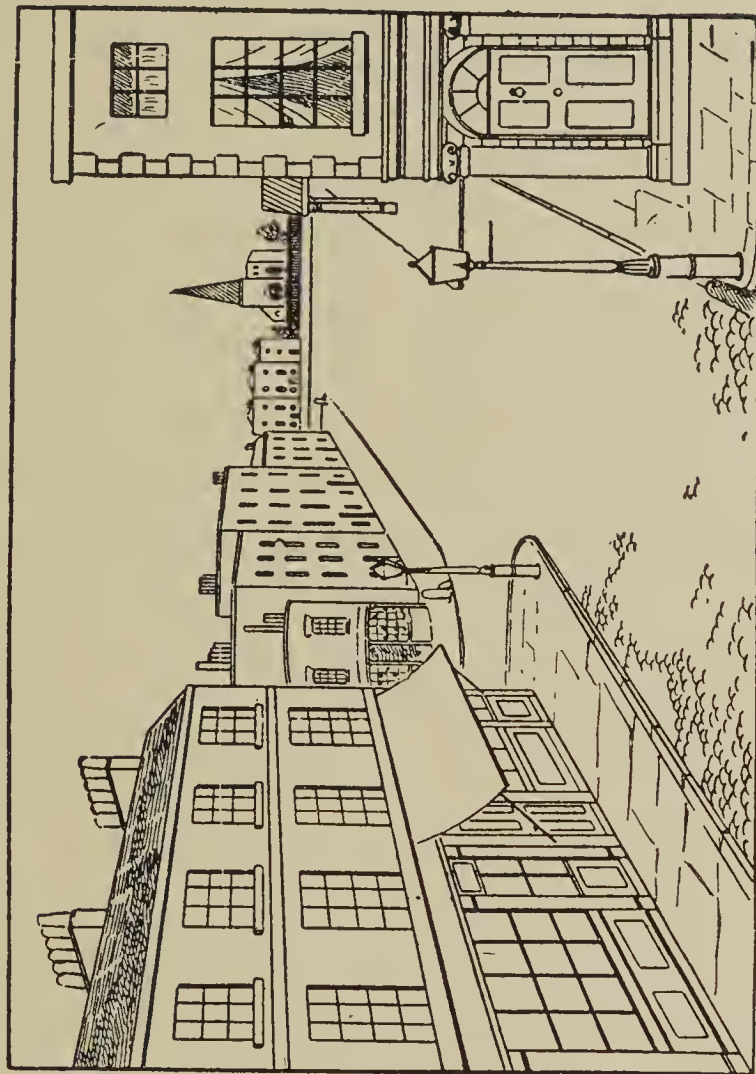


Fig. 17.

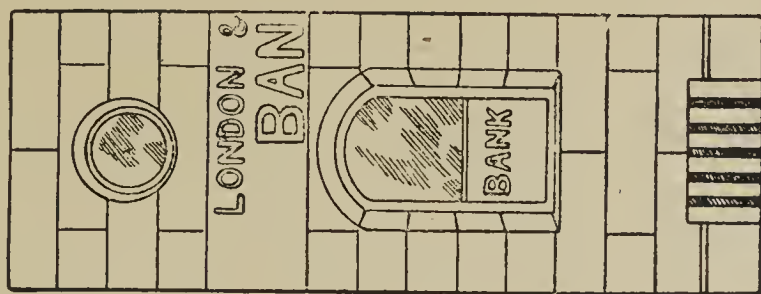


Fig. 19.

Figs. 17 to 19.—Street Scene, with Side Wings.



painting. First mark in all the folds with charcoal, taking care to notice that when a curtain is drawn up, say with a cord and tassel (see Fig. 21), the folds are angular; this should particularly be the case if the material it is desired to represent be of a thick and stiff nature, such as heavy damask, repp, etc. When the outline drawing is correct, cover the charcoal lines with vandyke brown, and dust off.

As an instance, the manipulation of three colours—say crimson, blue and amber—will be detailed; any others may be worked in the same way. For the crimson, thin out some damp lake, and go over the whole of the work and then let this dry. Next well thin out some brown lake, and lay in all the folds with it. If there are bullion fringe, cord, tassels, or other ornaments already drawn in with vandyke, as shown in Fig. 21, glaze these all over with pink. Now glaze over the curtain with thin crimson lake again, and by this time a considerable depth of tone will have been obtained. Now take a clean brush and some shadow colour—thin blue; go over the whole of the shadows—of course, every fold has its own shadow, but where the blue covers the brown lake it will be the deepest in tone—that is, purple. But on the larger wavy folds the blue goes over the crimson, which yields a pale cool shadow of a bluish tint. All shadows on warm colours are cold in tone and the opposite with cold colours, the shadows would be warm.

The high lights should be put in next, and for



crimson the colour must be orange red or orange chrome. Lay it on with a bold stroke, and mind the angular form of the folds; soften the edges of these high lights into the crimson. Now using a large brush with crimson lake, go over the whole of the work, shadows, and high lights as well, but not the part laid in with Dutch pink. It should be mentioned that the size used for working the first colours ought to be strong in order to prevent them rubbing up in the after glazings; but the last glazing should



Fig. 20.—Representation of Old Oak Ceiling.

have more water in it; this will prevent the damp from shaling.

In the case of amber drapery, the drawing is made in exactly the same way as for crimson, the folds and angular forms being the same, of course, one colour as another. For the first painting, use yellow ochre and raw sienna in equal proportions, and glaze over the whole. When this is dry, lay the shadows and folds in with brown lake; soften the edges off into the yellow previously laid on. Now lay on the high lights with pale orange chrome. After this is all dry, glaze over with the colour laid on first, that is, the mixed yellow ochre and raw sienna, and

then glaze over the shadows with thin damp lake. Now touch in the highest lights with lemon chrome. When this is all dry, glaze over the whole with raw sienna. By this time the work will look finished, but if it appears to require bringing out more, glaze over again until the desired effect is obtained.

The same remarks regarding the drawing again apply, of course, with blue or other colours. There

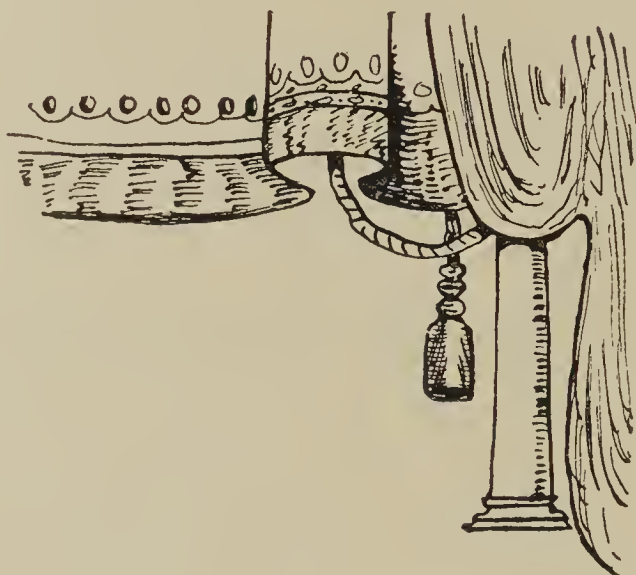


Fig. 21.—Representation of Curtain.

are many other compound colours, but it is not necessary to go into them in detail, as the artist will gradually obtain the necessary knowledge with practice. For instance, purple would be a compound of blue and damp lake; pale rose colours would be white with your crimson and damp lakes, according to the depth of tint. White lace curtains, worked out in patterns, try the skill of the artist—their shadows are delicate blue. Where heavy folds are to be shown, a very little vandyke brown would have to be added

to the blue, or glazed over it. Then there are the different shades of green, from the very deep to the palest sea or pea green ; in fact, drapery painting is study in itself.

For the blue, then, assuming that the drawing is as before, and all is quite dry, first glaze over with thin azure blue. Lay in the folds and shadows with thin damp lake. This will keep the shadows warm ; blue being a cold colour, it would not do to put a darker blue for shadows. Prussian blue may be used, but nothing beats azure blue when painting blue drapery.

Should the folds or shadows in any part be required to be very strong, use a little brown lake with the damp lake, using judgment for depth of tone. After this is all dry, glaze over with azure blue. If a deeper tone is required, touch up the high lights with white, and glaze over again with your azure until satisfactory. Green draperies are worked the same—that is, royal green, emerald, and the green lakes would come into their composition.

## CHAPTER IV

### Stage Noises and Effects

**Horse's Hoofs and Cart Wheels.**—A steady beat of a horse's hoofs upon a hard and sounding road may be imitated with a pair of cups which are struck, open end to open end. The dull, hollow-like sound gives the thud, thud.

Procure a cocoanut and saw it in half, after which remove the nut. Next attach to each half a strap, so that the half-nut shells may be fastened to the hands, with round part of shell turned to the palms and open end downwards. Use these on a wooden table, and with a little ingenuity it will soon be discovered how the sounds may be well imitated. Clapping the shells down will give the sound of the hoofs. Knock them together at a suitable point when a canter of the horses is to be rendered.

Another instrument imitative of a horse's hoofs consists of two pads or flat cushions which may be struck by two long sticks. A horse galloping over pavement or sod may have its footfalls imitated by strokes delivered on the pads.

The sound of the wheels of a cart is produced on a wooden table, by means of a round wooden wash tub. Take hold of the two handles of the tub, and



make the bottom outside of the tub take a circular tilted motion. Any speed may be adopted according to the supposed motion of the cart. Also, the intensity of sound for near or distant effects may be created by modulating the degree of pressure, as the tub is twisted bottom side downwards on the table.

**Birds and Insects.**—The imitation of the singing of birds may be most easily produced by the small instruments which are used for the purpose of teaching birds to sing, and are obtainable for a few pence from most toy shops.

The chirp of the kitchen cricket is truly imitated by means of a glass stoppered bottle about 2 in. in diameter and 6 in. deep. The stopper must be an ill-fitting one (not ground in). Press the stopper slightly to one side and give a little twist round, thus scraping the side of the stopper against the inside of the neck of the bottle.

**Animals.**—A lion's roar may be produced by a somewhat similar instrument. This consists of a shell or cylinder, about the size of a bucket, closed at one end and open at the other. Several hoops surround the shell, one of them securing the diaphragm closing one end. The diaphragm is made of parchment. It is set in motion by a string through the centre.

**Dancing.**—A clog dance may be rendered so far as sound is concerned by operating two long-handled mallets as if they were the feet of the dancer.

**A Crash.**—For the production of the noise of the breakage of glass or earthenware in an adjoining



room," or falling downstairs, etc., etc., a small sack or bag half filled with broken glass is tied up tightly to prevent the glass coming out; this, when held up and let fall, gives an excellent effect. For another "crash," some short pieces of iron or gas barrel—in fact, anything of the sort would do—should be thrown down all together.

**Wind.**—To produce a noise resembling that made by the wind a machine like that illustrated in Fig. 22 is used. This, it will be seen, consists of a roller which revolves between a piece of silk B, each end of which is fastened round two small battens c. The two battens when brought together may have two screws put through them. The silk is stretched tightly by means of two firmly fixed stretchers D, and when the handle is turned, the roller rubs the silk, producing the sound required. On the roller are three round ridges standing up about  $\frac{1}{2}$  in., as shown.

**Thunder.**—For thunder use a large piece of sheet iron; if rather stout, it will give a better rolling sound when shaken. The best way is to hang it in a corner above the head so that the hand may reach it. Make two holes at the top, have a piece of wood about the thickness of an ordinary broom handle and about a foot long, placed just at the top and in line with the two holes; drive two 2-in. nails through the wood and iron and clench them; now get a stout piece of rope, put the ends one through each hole and tie firmly; the other end of the rope is drawn

over a beam or any convenient place and made fast. It will be seen that the piece of wood will prevent the iron cutting the rope. It is usual to take hold of one corner of the sheet and vigorously to shake it. The naturalness of the sound will depend upon the judgment of the operator.

**Rain.**—A rain box is used to represent rain or hail. This simply consists of a box from 2 ft. to

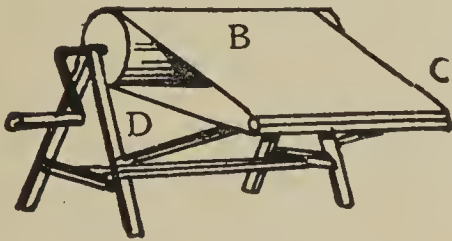


Fig. 22.—Apparatus for Producing Noise of Wind.



Fig. 23.—Apparatus for Producing Fire.

3 ft. long, and 1 ft. to 18 in. wide, and from 6 in. to 8 in. in depth, made with  $\frac{1}{2}$ -in. board, with the exception of the bottom, which is 1 in. thick, and studded with 3-in. wire nails about 4 in. apart. Turn the box upside down, make some pencil lines, then drive in the nails, which are to protrude inside the box. The box is partly filled with peas which will knock against the nails when it is rolled from side to side. In operation it should be held in front of the body,

a hand on each side. The quantity of peas required for a box of the size here described would be about a quart.

**A Fire with Pot Boiling.**—A lamp placed behind a piece of red material will give the effect of a fire burning in a grate, and steam may be caused to issue from a pot by putting a few lumps of unslaked lime into the pot and, about two minutes before the effect is required, pouring a quart or more of water on to the lime in the pot.

**Fire.**—Another method for producing flames, such as when representing a house on fire, etc., is accomplished by the use of lycopodium powder. The simplest method is to have an indiarubber ball attached to a tube. The ball is filled with the powder and held in the hollow of the hand. When the ball is pressed the powder is forced through on to a lighted taper held in the other hand. Take care to keep both away from the face. Fig. 23 shows a much better way of using the powder. The vessel here depicted may be made of tin or brass. The handle should be rather long, to prevent the lighted powder falling on the hand. The lid is perforated like a pepper castor. In the centre A is a round box with a top to screw on, having one, two, or more holes in it; this box is filled with cotton-wool or a sponge soaked in methylated spirit just before using. When the spirit is alight the box is shaken with an upward tendency. The lycopodium shaken through the holes becomes ignited, producing the flames.

**Snow.**—The snow box (Fig. 24) may be from 6 ft. to 15 ft. long, according to the size of the stage ; it is made of two boards which may be 9 in. wide, fastened together so as to form a V-shaped trough closed at both ends. The open top is covered with wire net, with a mesh of about  $\frac{3}{4}$  in. Fasten this to the box with small wire nails or staples, leaving a space open for putting in the snow, which is closed with pieces of string or wire after the snow has been

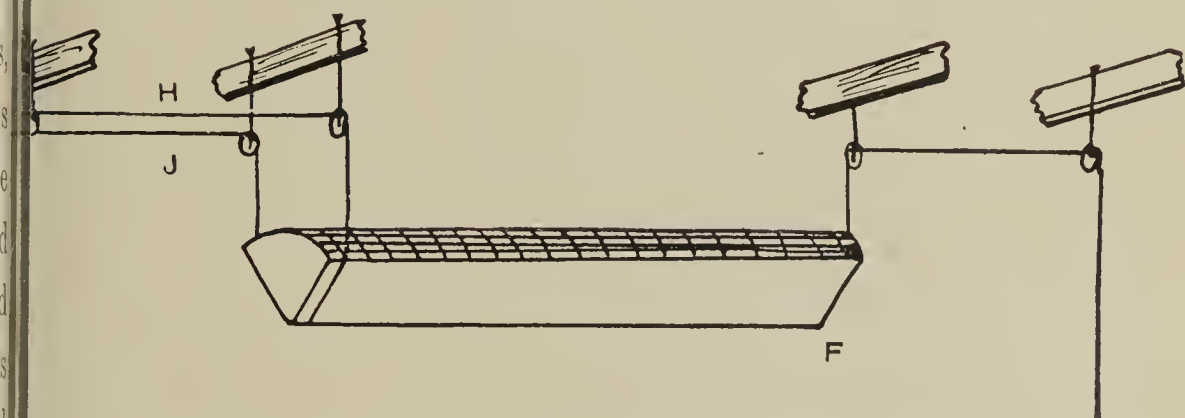


Fig. 24.—Apparatus for Distributing “Snow.”

put in. If the snow box is a long one it may have one or more partitions in it to give strength. The snow is made from tissue paper, and, to give the flakes a suitable form, the paper must be picked with the thumb and fingers. It will be obvious that paper cut with scissors would be quite out of character. The job is a bit tedious, as quite half a bushel will be required in the first place ; small quantities can be added afterwards to replace the waste.

The next thing is the hanging of the snow box so that it will work properly. First, the box must hang over the centre of the “snow storm.” Six



small blocks will be required, and sufficient rope, of course, to work it. There must be rope enough to lower the box on to the stage for refilling. Fig. 24 shows the way the box is hung. To get the rocking motion necessary to scatter the snow, one rope must be fastened right round one end of the box. The other end should be fastened underneath only (at F, Fig. 24); the rope G would be fastened on the upper

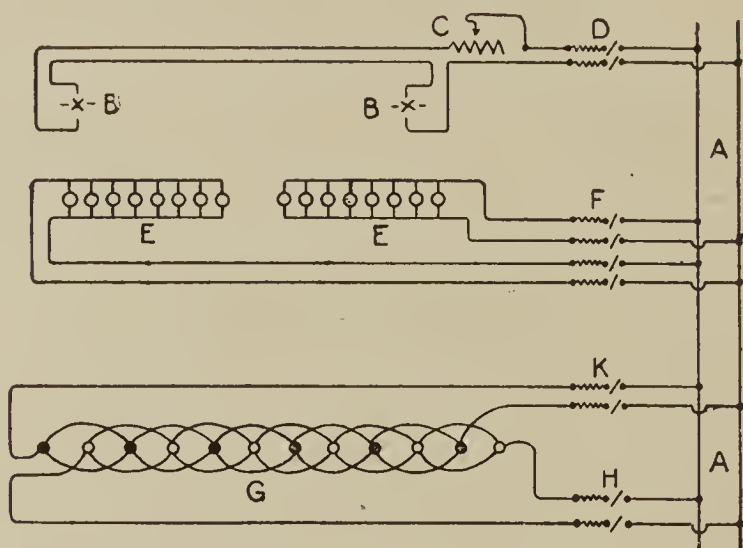


Fig. 25.—Electric Wiring for Small Stage.

side, the rope H being held in the right hand and J in the left. Keep the left hand taut, slacken the right, and the box will turn half over; draw the right hand taut, and the box resumes its first position. By continuing this action, every time the box drops the snow falls through the wire, fluttering to the stage. The six single pulley blocks are fixed where convenient.

**Lighting.**—The lighting of a stage must be done in such a manner as to ensure a broad open light, and so that there shall be no shadows cast on the



floor or scenery by the actors or anything that is placed on the stage. To avoid this, the stage must be lighted from the front, at the top, and the sides. The respective names of these lights are footlights, battens or toplights, and sidelights. Should gas be used they must all be protected to prevent accident from fire. Fig. 25 shows a diagram of connections for an electrically-lighted stage.

In this diagram A are the busbars, B the side arc lamps, C the series resistance, D the fuse, E the lamps, F and K double-pole switches and fuses, G white and red lamps, and H a control for the white lamps.

Footlights should be laid about 4 in. or 5 in. lower than the stage floor, so that the bottom part of the actual light shall be on a level with the floor of the stage, as this will prevent the floor being in shadow, as would be the case if the lights were too low; for obvious reasons it would not do to have them above the floor. The reflectors are fixed to the front of the stage behind the light.

Sidelights are for the purpose of illuminating the wings, so that the shadow of one wing shall not fall on another. This, however, may be arranged by the footlights and battens, and these lights easily be dispensed with, particularly on a small stage, as they are in the way when the space is limited. If they are used, three or four should be placed behind each wing.

## CHAPTER V

### “ Making-up ”

THE materials required consist of grease-paints, crepe-hair, rouge, spirit gum, cocoa-butter, black and blue pencils, a powder puff and hare's foot. The grease-paints are kept in a number of different shades, which vary according to the making, No. 2½ for men, No. 6 for old men, etc. Special paints are procurable for such characters as Chinamen, Japanese, nigger or gipsy, a blue-grey being procurable for unshaven chins. Some of the paints are in thick sticks, these being called lining pencils, old red being a useful colour for lining, and lead grey for shadows, that is, to produce an effect of hollows in the face and neck. Besides the paints will be required some theatrical face powder, or prepared fuller's earth, a little rouge, lip salve and spirit gum, the latter being used for affixing to the face whiskers, moustaches and eyebrows made from crepe-hair. Crepe-hair is sold by the yard in several shades. It is cut to the size required and combed out, then after it has been affixed to the face with spirit gum it is trimmed into shape with scissors, and, if necessary, curled with curling-irons to produce the desired effect. Individual skill is the factor here.

Wigs form a very important item, for upon a

suitable wig the success of a large number of make-ups depend. Figs. 26 to 39 show a number of useful forms of wigs, etc., suitable for various characters. These styles and many others can be hired at a small charge from the makers and dealers.

Fig. 26 shows an ordinary dress wig suitable for all parts in modern drama, farces, etc. It is procurable in various shades and colours. Fig. 27 is a half-bald wig. Fig. 28 is for a comical old man. This type of wig varies very much in style, some of which consist principally of a scalp with merely a few straggling hairs at the back. Fig. 29 is a half-bald wig suitable for serious characters; Fig. 30 is for a cavalier of the time of Charles II; Fig. 31 is a powder wig worn in the plays of the Restoration period; Fig. 32 Chinaman; and Fig. 33 a clown.

For ladies' wigs Fig. 34 shows a lady's court wig of a style that is almost invariably called into request in all the old English comedies. The “ Grand Duchess ” wig ( Fig. 35 ) is also largely used in early period costume plays. Fig. 36 is of a very different character, being intended for a comic old woman. These three, together with the impersonator's own hair, will cover practically all requirements.

Moustaches, as has been previously mentioned, can be usually fashioned from crepe-hair, but sometimes a long beard is an essential. These can be obtained on wires, Fig. 37 being a suitable beard for an old man. Fig. 38 shows side-whiskers, also on wire, whilst Fig. 39 is a chin-piece for French or Yankee





Fig. 26



Fig. 27



Fig. 28

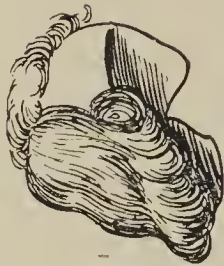


Fig. 29

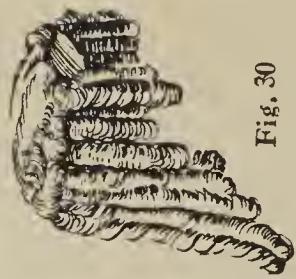


Fig. 30

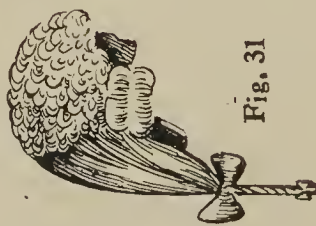


Fig. 31

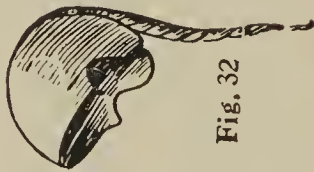


Fig. 32



Fig. 33



Fig. 34

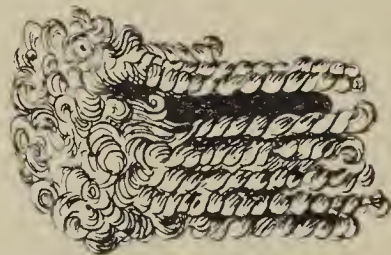


Fig. 35

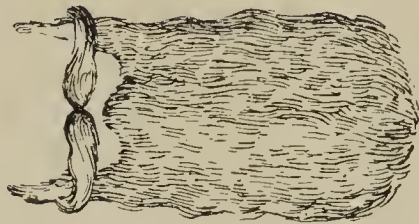


Fig. 37

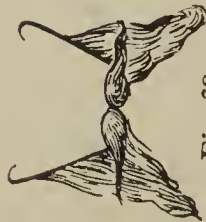


Fig. 38



Fig. 39

characters, seamen, etc. Whiskers may, of course, be made from crepe-hair, and the material is so cheap that many amateurs may prefer to make their own. It can be had in every possible colour. A great deal may be done also in the way of fashioning wigs from horse-hair and even dyed “ tow,” which is procurable from any oil-shop, stitched on stockingette.

Before proceeding to make up the face, it is coated with cocoa-butter, which serves as a foundation for the grease-paint. This is well rubbed into the skin, a stick of grease-paint of the required shade of complexion being then rubbed on the cheeks and forehead, and then with the fingers smeared uniformly all over. Taking the normal young man (Fig. 40), Figs. 41 to 45 show the same person made up as a “ rough,” villain, Chinese, an old man, and comic sailor. In the case of Fig. 41, a rather deep coloured grease-paint should be used, applied thinly. A little carmine colouring should then be worked in on the cheek-bones and nose, and carefully softened off into the flesh tint; the latter especially, if one desires to obtain the effect of a hard drinker. Now apply some of the blue-black grease-paint to the chin and lower part of the face to produce the unshaven appearance.

The high lights, shadows and lines are next put on, the former being used to bring certain parts of the face into more prominent relief. Thus, after hollowing the cheeks and eye-sockets with lead grey, the effect will be heightened by the application of a lighter-coloured grease-paint to the cheek-bones and





Fig. 40.—Typical  
Young Man.



Fig. 41.—Rough.



Fig. 44.—  
Old Man.



Fig. 42.—Villain.



Fig. 43.—Chinese.

edge of the forehead, as rendered clear in the illustration.

Light and shade lends most useful aid in putting in telling lines on the forehead, round the eye, etc., the dark lining pencils being utilised first, and then the lights put in in a lighter-coloured grease-paint close to the dark line.

Lines can conveniently be put in with a small camel-hair brush, melting the top of the grease-paint over a gas-jet, then filling the brush with melted colour and marking out on the face, afterwards softening down with the finger until there is no hard line left. This softening down is most important.

After the line has been satisfactorily produced, the high lights are painted above the wrinkles always. In the example given the line joining the nose with the mouth should be accentuated, and the mouth enlarged with carmine or crimson lake. How to sink the eyes by darkening the hollows has already been described. Add the deepened eyebrows and lines beneath the eye. One's own dishevelled hair and an old cap and handkerchief round the neck will complete the character.

In the case of Fig. 42, a grease-paint for sunburnt faces should be used. Lining should be reduced to a minimum. The eyelashes should be darkened with an eyebrow pencil, the eyebrows being carefully mapped out as indicated. Then a little carmine is rubbed directly beneath the eyebrow to give a brightening effect to the eye, which is lined also underneath



Fig. 47. — Lady shown by Fig. 46 "made-up" to give appearance of age.



Fig. 46. — Typical Young Lady.



Fig. 45. Comic Sailor make-up.



Fig. 48. — Same Character as Fig 46 made-up to represent Distressed Heroine.



Fig. 49. — Comic Old Woman.



as indicated. Short lines should also spring from the corners of the mouth, drawn according to the disposition of the character; for an ill-tempered person downwards, a smiling, insinuating type, upwards. An important point is the carefully waxed moustache and oiled hair, for which the illustration will be a useful guide.

Special grease-paints are sold for Oriental characters, such as Fig. 43, for which the wig Fig. 32 is used. One has to endeavour to obtain in such characters an oval face with receding forehead. This may be done by bringing into prominence the brows, and rubbing shadow colour on the forehead. Hollow the cheeks with umber, and lengthen the eyes as indicated to produce the “ almond eyes ” associated with this race. Lightly line the forehead, the lines being continued on the artificial skin of the wig. This with care will render the join invisible. Finally complete with moustache.

Fig. 44 introduces the wig (Fig. 27) and the long beard (Fig. 37). To convey the idea of old age, the face must be invested with a sallow line, wrinkles and furrows introduced, and the size of the eye decreased. See that the joint of the wig is quite invisible. In making up an old man a grease-paint is generally used to make the face look pale and wan though in this particular character a ruddy complexion is frequently adopted. Paint in the wrinkles on the forehead, round the eyes and mouth, with burnt-umber or old red, using a camel-hair brush, and



Fig. 50.—Pirate (alms).

require copious padding, a pair of bell-bottom trousers being an asset. The rest of the make-up will be sufficiently clear from the illustration.

From a study of Figs. 46 and 47 the method of transforming a young lady into an aged character will be readily apparent, the lining being for the most part the same as for an old man. It will be observed that the dressing of the hair forms quite an important factor, this being powdered white if the performer's own hair is made use of. If a common type of

give a touch of rouge to the cheeks and over the eyelids. The bushy eyebrows are made of white crêpe-hair fixed with spirit gum.

Fig. 45 shows a comic sailor type — one that is frequently called for in home entertainments. In this character the wig shown by Fig. 28 is utilised, and also the chin-piece (Fig. 39). The body of the impersonator will

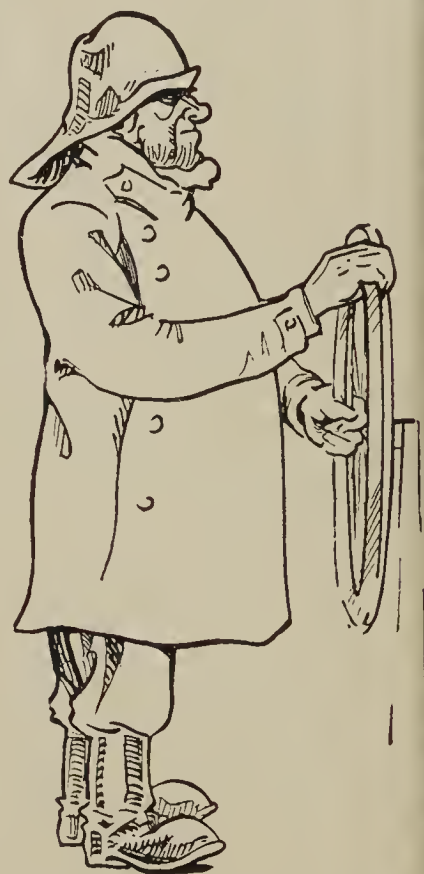


Fig. 51.—Seaman (steer).



person is required, stopping out a few teeth in the front with a special black stopping will largely add to the effect.

The dressing of the hair, it will be observed, also forms an important item in the character shown in Fig. 48, which represents the same young lady in the character of the distressed heroine who has suffered prolonged starvation and



Fig. 52.—Mephistopheles (demon).



Fig. 53.—Professor (demonstrate).

wasting. The main effect in this character has been brought about by applying tone to the more prominent parts of the cheeks with high lights above and below, which will impart a sunken effect to the face.

In Fig. 49 the comic old woman's wig (Fig. 36) is utilised, the rest of the make-up requiring

no explanation. In such a subject the lining can be much more marked, and does not require to be softened down as in the case of serious characters.

To take off a "make-up" the face should be first rubbed with cocoa-butter and then wiped with a soft white cloth, the remainder of the grease colour being then washed off in the usual way.

Some suggestions for costumes are given by Figs. 50 to 54. Fig. 50 shows a pirate, a quite inexpensive get-up. A few old war trophies, pistols, carving knives; an old pair of breeches, chalk lines to form the stripes, brown-paper turn-overs for the jack boots; an old shirt and waistcoat, red handkerchief tied round the head, and last, but not least, a discarded hat. Fig. 51 shows a suitable type of make-up for a nautical character, and Fig. 53 a simple costume suitable for the wig shown by Fig. 37.

Mephistopheles (Fig. 52) presents rather more difficulty than those described. He requires to be clothed throughout in red. A tight-fitting coat, short breeches cut as shown, red cloak, red paper collar and shoes, and the costume is complete. The ghost (Fig. 54) does not take much getting up, as will be observed by the illustration.

It will be observed that the costume shown by Fig. 55 does not differ very much from that shown by Fig. 52, except that the coat is fuller and laced down the front and the cloak is dispensed with.

A knight in armour is frequently required in theatricals, etc., and Fig. 56 shows one that can easily

be got up for small entertainments. The various parts can be cut out of thin card and fitted with tapes, as shown by Fig. 57. A shows the shape to cut the breast-plate, a similar piece being cut for the back, the two parts being fastened together by



Fig. 54.—Ghost (dread).

means of tapes at the sides and over the shoulders, the curvative being secured by merely tightening up the tapes the requisite amount.

The knight will preferably be clothed in a pair of tight breeches and a jersey, and should wear a belt, from which is suspended by loops of tape the two plates shaped as in B. The shoulder pieces C should be cut to the shape given, a wedge-shape por-

tion being cut away as shown, so that the card may be bent to form the bulging shape, and the joint secured with large paper-fasteners. The shoulder pieces should extend far enough to well overlap the breast-plate



Fig. 55. — Pedlar (sell).



Fig. 56.—Knight.

and corresponding piece at the back, as indicated in Fig. 56. The two arm-guards are shown in the flat by D and E, the leg pieces being cut similarly, but larger and broad enough to extend a little more than half-way round the limb. These are secured with tapes in the same manner as the other portions.



and G show the knee guard and elbow guard respectively, slits being cut in both these, as shown, for bending, and securing with paper-fasteners to produce the rounded form.

The skirt of chain-mail can be best represented by brushing aluminium paint over a piece of net or

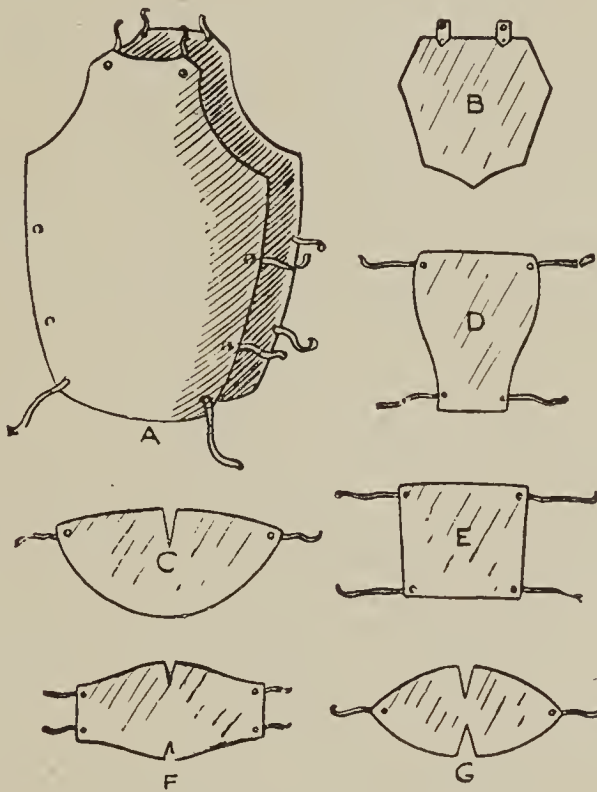


Fig. 57.—Patterns for Armour.

very coarse canvas, the crown of an old bowler hat making a good helmet when treated with the same paint. All the different parts should be sized and then treated in a similar manner, when a tolerably good effect of armour will be produced.

The foregoing are only intended as suggestions, and to show that costumes can be arranged with the simplest of materials.

## CHAPTER VI

### Black Art or Oriental Magic

**Stage.**—The area of the stage should be about 10 ft. square, that is, 10 ft. long by 10 ft. deep. The depth is a most important point, and no theatre should increase or decrease its size, only in the same ratio. The depth, however, might be increased as desired; but the size given will be found a most suitable one. Fig. 58 shows the floor of the stage which should be made in three sections, and built up from  $\frac{1}{2}$ -in. tongued-and-grooved boards and battened up for strength as shown.

The corners require cutting away to allow for the posts A, B, C, and D (Fig. 59). These are 8 ft. 6 in. high, and are fitted with L-shaped iron brackets E. The same width as the corner posts, these being about 2 in. square, made from pine or basswood. The brackets are securely bolted to each post with  $\frac{1}{4}$ -in. iron bolts 6 in. from the floor. Four battens F, G, H, and I are tenoned into the legs level with these brackets, and on these the floor of the stage should rest. Four  $\frac{3}{8}$ -in. bolts with wing-nuts and washers are used to bolt up the floor to the brackets at x (Fig. 58), thus keeping everything secure and steady.

The top framework (Fig. 60) is made from lighter

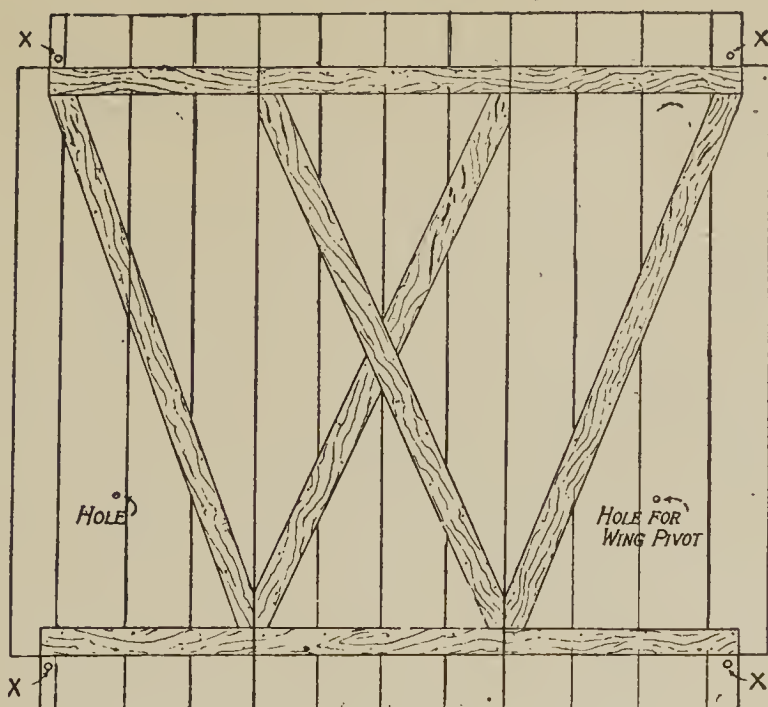


Fig. 58.—Floor of Black-art Stage.

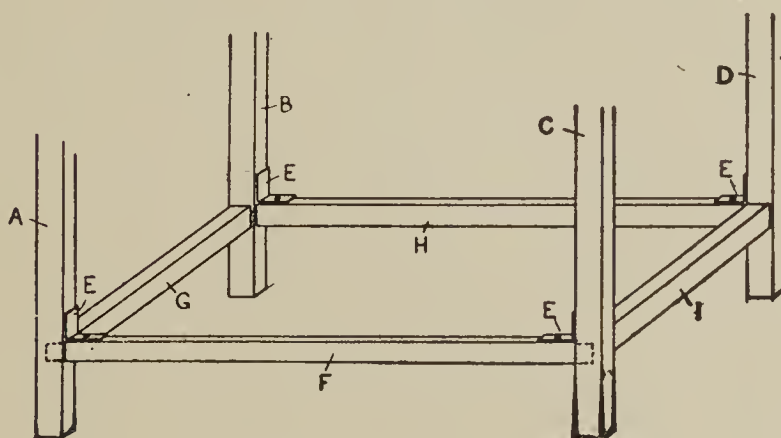


Fig. 59.—Corner Posts and Bottom Frame.

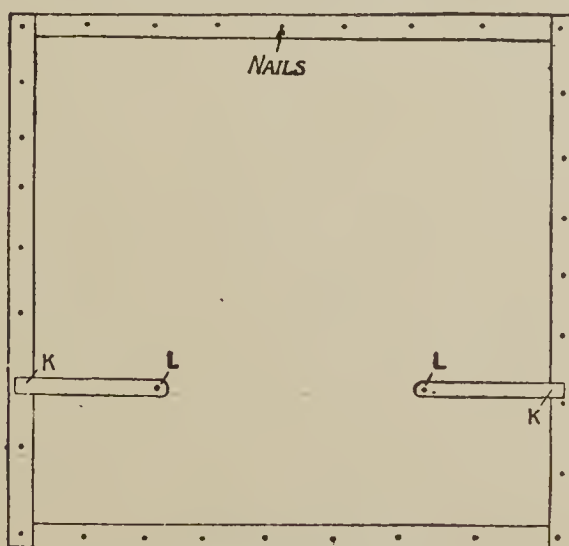


Fig. 60.—Top Framework.

battens (2 in. by  $1\frac{3}{4}$  in. will be found strong enough), and these should fit easily into H slides (see Fig. 61), and screwed up by means of a single bolt and wing-nut in each batten. One-half of the H is screwed to the top of the post with countersunk screws on each side, the other half being provided with a hole J to admit the bolt. At K (Fig. 60) a short arm should be placed. This arm is 18 in. long, and should freely move. The arms are best made from wood 2 in. wide and  $1\frac{1}{2}$  in. thick, with  $\frac{3}{8}$ -in. holes L bored at one end.

The top of the framework should be provided with round-headed nails or screws standing out at least  $\frac{3}{8}$  in. These nails should be placed one every 8 in., and are to allow a black cloth top to be fitted on by means of eyelets. The holes L are to allow a wing, or, to be technically correct, a shutter, to be pivoted. This shutter (Fig. 62) is best constructed from a framework covered with black cloth. This cloth should be nailed with black japanned tacks at the top and bottom, but should be glued at every other portion.

**Proscenium.**—The proscenium (Fig. 63) is left to the taste of the performer; but the arched design is preferred because it excludes more light, a very important point in the working of a theatre. The proscenium may be made in sections to allow for space in packing. It may be made from sound three-ply wood  $\frac{1}{4}$  in. thick, and can be bolted through the framework to the front with round-headed bolts painted to imitate the decoration.

The front of the theatre may have a footboard M,





Fig. 61.—H-Slide.

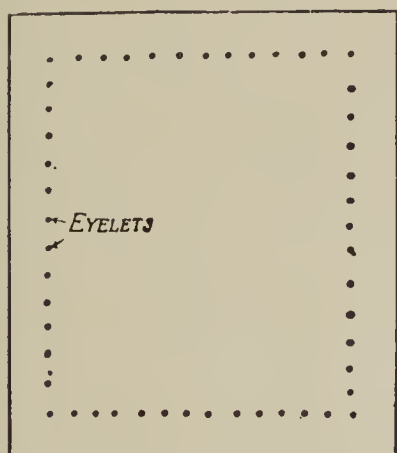


Fig. 64.—Canopy.

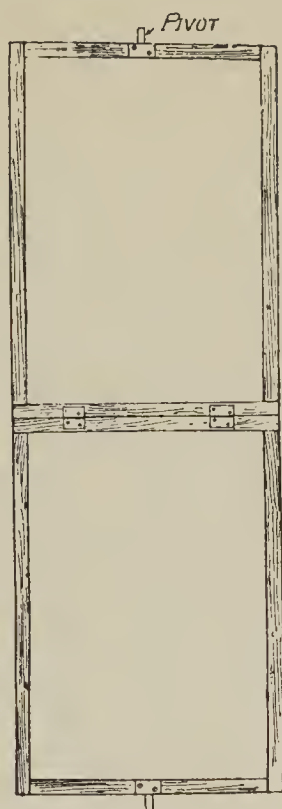


Fig. 62.—Wing.

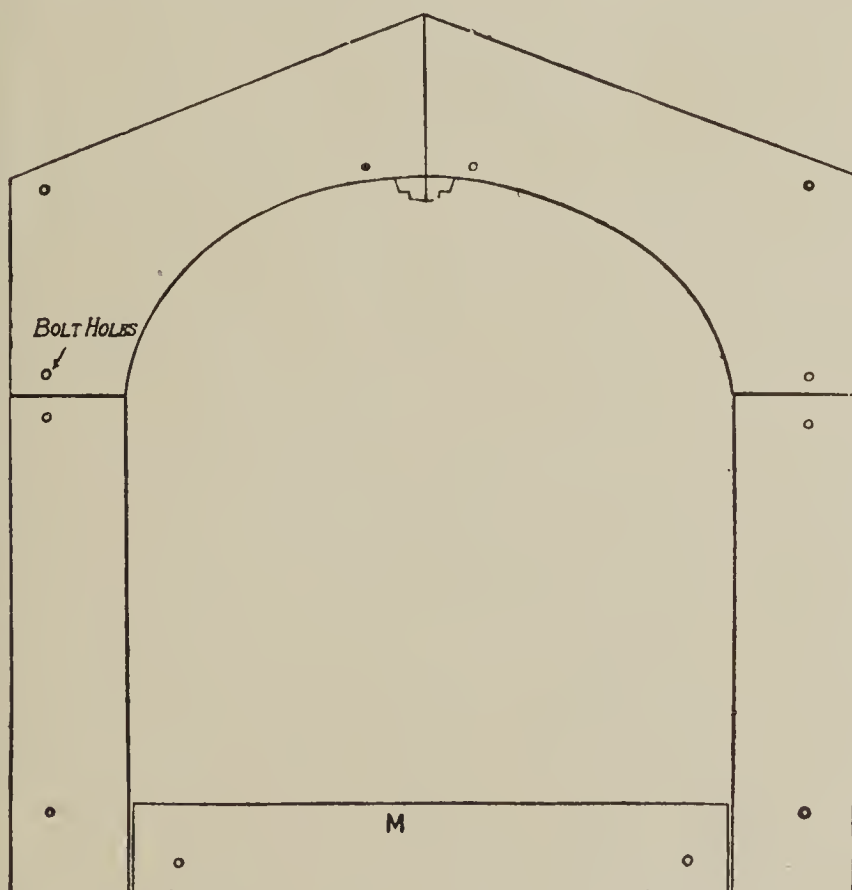


Fig. 63.—Back View of Proscenium of Black-art Stage.

and its use is strongly advised, as it not only shows the floor plan, but gives a more complete finish to the theatre front in the absence of footlights and wires which are not required.

The proscenium front and the arch of the theatre should be provided with plenty of lights. The lights should be as powerful as possible and fitted with small reflectors. Electric light is the best, and sixteen lamps will not be more expensive or as troublesome, in the long run, than oil or acetylene if the current is available. The front of the proscenium should be tastefully and artistically decorated in white and gold. A dead white enamel or water paint, which will always wash, is preferable. Green paint is preferred to gilt, as it can always be repainted and kept new at a very small cost. Bronze powder, turpentine, and gold-size is an excellent paint. Use sparingly, and only make a sufficient quantity to apply a small portion of the work, as it dries quickly and wastes. Black and gold would be a suitable decoration; but remembering the fact that the interior is all black, white decoration is to be preferred. The whole of the framework and battens is now given two coats of dead black paint. All interior parts such as bolts, nuts, etc., must be blackened. The inside of the proscenium also must receive a coat of the black paint. This is absolutely necessary to the success of the performance.

**Curtains, etc.**—The top of the theatre should now be provided with a canopy to exclude all

ht. It may not be made from an expensive cloth velvet; but it must be made from substantial stuff, not transparent, and should have a row of eyelets punched in 3 in. from the ends (*see* Fig. 64). These eyelets may be had very cheaply from any sailmaker, who would undertake the necessary work for a fewoppers extra on the cost of the eyelets. The top will now fit on fairly tight without sagging, the ends hanging over the outside of the framework, excluding the light.

Three curtains are now made for the two sides and back. Velvet is a highly recommended article; but a common vicuna cloth is equally suitable, always wears well, shows no gloss and is dead black, and sounds a deal of handling and never becomes transparent through creasing. These curtains are fixed by means of eyelets on the top framework, tied with ropes to the bottom of the posts and tucked under the stage on the outsides. The back curtain should, however, be provided with an opening N (Fig. 65) to allow the performer or his assistant to escape or retire if necessary.

In front of this opening another curtain is placed. This is known as the "slide," and is fixed to the top or canopy by means of four S-shaped black hooks, and this curtain or screen is fixed about 2 ft. from the back curtain and the end just trailing the floor, and should be 3 ft. wide.

A similar curtain shown in the plan (Fig. 65), but 6 ft. 6 in. wide, should be placed on the performer's

left-hand side. This curtain is sometimes hung from a wooden rod or stretcher running across the top of the theatre, or it may be supported from the canopy.

A black rug or carpet is next required to cover the floor of the stage, and this should be made from thick baize on to which is sewn a thin but dull black

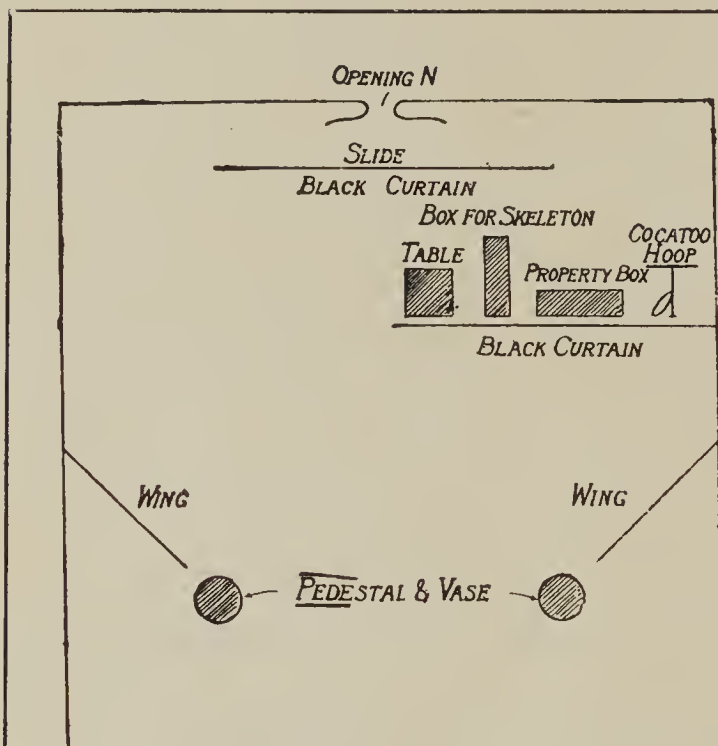


Fig. 65.—Plan of Stage.



Fig. 66.—Curtain Wire.

cloth. This carpet is necessary to deaden the sound of the unseen assistant's footsteps as he walks about the stage.

This concludes the instructions on building up the theatre, but before proceeding with the properties and magical effects it would be wise to state one or two warnings which might be necessary to the beginner.



**Lighting.**—The interior parts of the theatre must be absolutely darkened; any admittance of light will be fatal to the performance. Keep all woodwork dead black, and have as bright a light as possible on the proscenium sides and top to dazzle the eyes of the audience; it is then impossible for them to detect any object other than a white one in the theatre. No lights should appear on the footboard, either in front (footlights) or behind. The lights in the building or room should be extinguished excepting those at the back. This can always be tested before a performance. Keep a space of at least 4 ft. from the front of the theatre clear.

A curtain now completes the theatre, and it should be hung on a flexible wire (Fig. 66). Both ends are fitted with a hook, which can be attached to two staples screwed in the side battens underneath. The curtain top should be braided and have small brass rings attached. The curtain is pulled aside by merely pulling a cord which is attached to the end ring of the curtain. A pair of curtains may be used if desired to open each way. Or, again, a curtain may be made to roll up on a roller. The first-named, however, will be found the simplest and most convenient, and velvet would be a suitable material trimmed with coloured braid and tassels. If preferred, the curtain may be ornamented with all manner of weird cabalistic signs, such as witches' heads, skull and bones, wand staves and crescents, cornucopiæ, cauldron, cats, and other mystic symbols.

**Apparatus.**—The amount of “props” or apparatus required depends entirely on the number and character of the performer’s tricks. For the purpose of explaining thoroughly the principle of black art several tricks will be explained later, but as the construction differs in every way to ordinary magic apparatus, the props for a first-class mystifying thirty-minutes’ performance will now be explained.

To effect the appearance of any article it is suddenly uncovered; the article being white is instantly visible. The disappearance is effected by a sudden covering or “blotting out” by means of a black cloth. This is the principle of black art.

A table is always required. This should be made to take to pieces to facilitate packing—a plain  $\frac{3}{4}$ -in. deal top with rounded corners (*see* Fig. 67), and having on the under-side four brass or iron plates  $1\frac{1}{2}$  in. in diameter with a  $\frac{3}{8}$ -in. threaded hole, fixed with three countersunk screws (Fig. 68). The legs of the table should be of turned wood, or consist of a hollow tube, whichever preferred, the top plate being fitted with a screwed shank B to fit into each of the socket plates A.

A cover should be made to fit over the table, and it should be of such a character that it fits loosely over the table and rests in folds on the floor. To the top of the bag should be sewn a loop or ring. The bag should not be made sack-fashion, but “built up”; that is to say, made square, using separate pieces of material for the sides and top. Some per-

formers use weighted covers, and this is done by inserting a lead weight or shot in pockets in the four

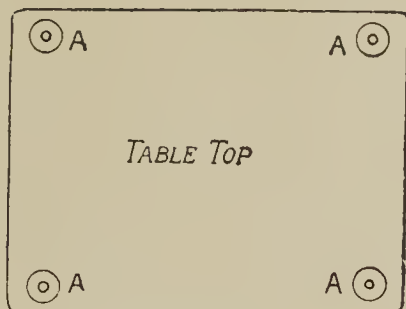


Fig. 67.

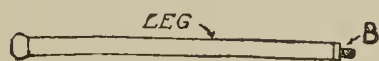


Fig. 69.



Fig. 68.

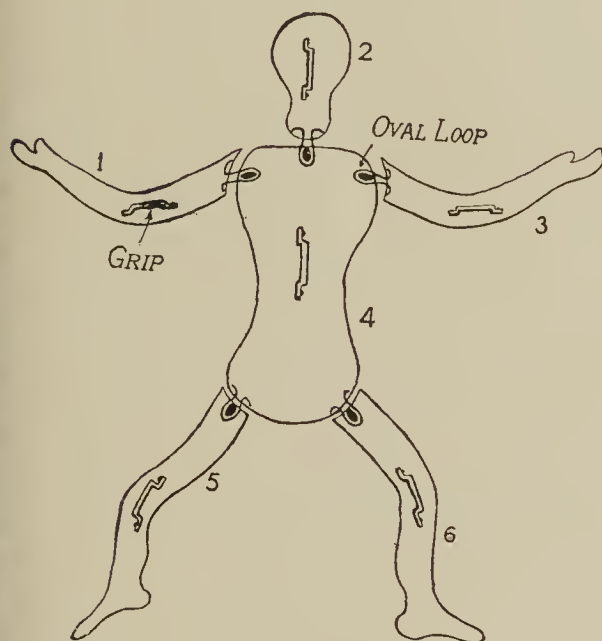


Fig. 71.

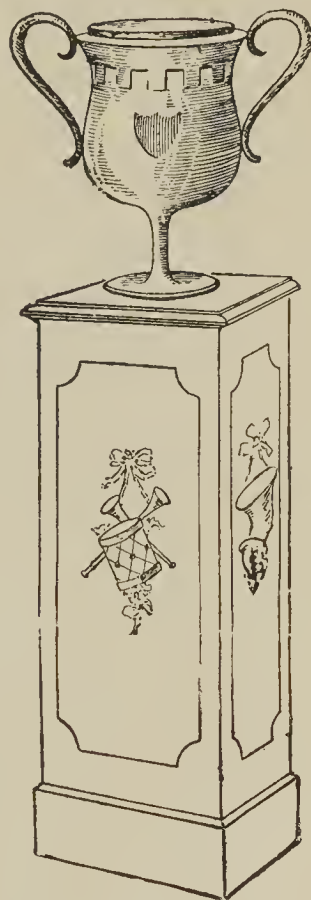


Fig. 70.



Fig. 72.

Figs. 67 to 72.—Impedimenta for Black Art or Oriental Magic.

corners of the bag. The general material used is black velvet, but a good soft black twill is equally

suitable. It must be a dead black, and the cheapest material will suit just as well as the most expensive provided it is not shiny and the texture is not too stiff.

The next is a pair of pedestals and vases (Fig. 70). These may be either purchased ready-made, or they can be easily constructed by the worker himself. The pedestals are usually made from papier-mâché; but they may be easily constructed from ply-wood, hinged to fold together. The pedestals may be decorated either by means of panels or artistic decoration in white and gold. The vases may be made by a wood-turner. The whole stands 3 ft. or 3 ft. 6 in. from the stage. The interior of the vase should be painted dead black, and is best shaped in the form of a U. A cardboard shape is made to fit this cavity, and it is lined with black cloth *inside and out*, and should fit loosely into each vase. Black cloth bags should be made to envelop these pedestals the same as the table.

A black stick is also required, and this is really an old ash walking-stick. It must have no crook at the end, and should be as rough and gnarled as possible and dyed with aniline stain. This must be done thoroughly, and steeped for a few days to allow it to penetrate into the wood.

A child's hoop painted white is also necessary. A black-cloth envelope should be made for this, and to complete the apparatus a tame white cockatoo should be enrolled as one of the performer's company. A conjurer's wand is also required, and this should be painted white; it is an advantage to have this



a glossy white. A black bag is also made to fit over it, and a thin material used as a substitute for silk for covering umbrellas is a suitable article.

As no black-art performance would be complete without its skeleton, the making of a suitable "ghost" will be explained. A complete skeleton may be purchased at any conjuring emporium, and these are generally reliable. There are, however, several kinds, the principle in each being practically the same. As effect is aimed at, the performer should always endeavour to find the best. A painted representation on a black ground is simple, and causes a deal of mystery.

A superior method is to have a special suit made for the assistant, and on it is painted a skeleton form, and a hood also painted for the head. The back of the assistant is left plain, so that on the supposed skeleton turning quickly round, it vanishes. Again a body is built up from thin wood, covered at the back with black velvet. The skeleton is in six parts (*see* Fig. 71), head, legs, arms, and body. The front is painted to represent a skeleton. To enable the skeleton to be dismembered with ease and rapidity, these parts must be provided with "grips." These are best made from strip aluminium,  $\frac{1}{2}$  in. by  $\frac{1}{8}$  in., painted black. These are fitted to each limb as shown, and the parts are joined up by means of an oval loop (Fig. 72), which can be instantaneously fixed or liberated by the unseen assistant.

There is an extra benefit with the wire loop, as it

gives a peculiar spring to the arms and legs. There are "real" models of skeletons made from papier-mâché, and these are most real in effect, because all the limbs are loose, and turn and twist in every direction, and leave the body and return again. These, however, are very troublesome at times, and it is not an uncommon thing to see a skeleton tie itself into a knot. With the one just described, however, it is impossible, and the only other improvement that could be suggested is that instead of painting the skeleton on the parts, a substitute is used for the real article. For instance, for the head an ordinary mask is used and fastened to the board; the eye sockets are receptacles for wool treated with phosphorus. The vertebræ and ribs are carved wood and strips of thick white cord, and the legs and arms are made from papier-mâché, half-round, and all are painted white, showing up very distinct and weird in the surrounding blackness.

**Performers.**—The final and most important item is the assistant, for it is he who does the magic. He is dressed completely from head to foot in a black overall enveloping the feet, body, arms, and head; the eye-holes are cut out, but a triple layer of black transparent gauze or veiling is inserted to prevent the white of the eyes being seen. He should wear no slippers, but walk about the stage in his socks inside his costume. The magician is dressed entirely in white. Eastern garb is commonly used. A suit of summer flannels is a favourite costume with black-art performers.

**Preparation.**—Having procured the necessary apparatus, it is set out as in the plan (Fig. 65). The pedestals and vases are brought forward and set one on each side of the stage and covered with the black cloth. The table, skeleton, cockatoo, hoop, and stick are all placed in readiness with their black coverings on. The conjurer's wand should be on the table, and the assistant ready clothed in his suit of black.

Before beginning the performance, the conjurer should walk into the body of the hall and test the stage; this is done by getting the assistant to stand well in front; if he cannot be discerned, the performer knows everything is then working in order. The use of the side wings is to counteract any rays of light which may unavoidably be sent towards the stage. For instance, supposing the magician is working at a bazaar doing an afternoon performance, and on the left side of the room is a row of windows, the right wing would, therefore, be placed in a slanting direction towards them; this has the effect of distributing the light across the stage. The use of wings may be discarded; very few performers carry them, but their adaptation is recommended.

**Effects.**—The first magical effect is the mystic appearance of the performer. The curtain is first drawn up, the performer is standing in the centre of the stage holding a black cloth in front of him, or the assistant standing behind him may hold it. The sudden dropping of the cloth reveals the conjurer standing out in bold relief against the black ground.



The performer then comes forward and says a few words of introduction. Walking on the stage again, he produces a wand, which is done by the assistant presenting it with the open end towards the magician, the assistant squeezing the bag and drawing it swiftly off the wand. The effect is magical. The magician does not pull or assist in any way ; he must throughout the performance remain stationary whilst the various effects are taking place, except it is to command and make magic passes with his wand. The magician now looks for a table on which to place his wand. "Hey presto," a table appears. The assistant has in the meantime deposited the table and its covering in the centre of the stage. A quick jerk and the cloth is removed, exposing the table.

The assistant must always avoid standing in front of any white apparatus or of passing in front of the performer, or of gripping any article on its white part. Such an accident would entirely give the trick away, and lend a clue to the solution of the whole mystery.

The table having been laid aside by the performer, he now proceeds to produce the vases and pedestals. The performer strikes with his wand towards the pedestal, and the assistant standing behind pulls off the black covering. Quickly, without any hesitation, he strikes towards the other pedestal, when that also is seen on the stage. The assistant throws the covers behind the screen or wing in readiness for the vanishing of them again at the end of the performance.



The performer now passes both vases for examination, and at the same time borrows from the audience such articles as rings, watches, handkerchiefs, visiting cards, matchboxes, etc. These are placed in one vase, and both are put on their respective pedestals. The conjurer commands a change to take place, and, immediately walking to the opposite vase, takes out the articles and hands them to their owners.

Such articles as handkerchiefs, matchboxes, etc., may be delivered magically by asking the owners to hold up their hands, and the article will come to them. This effect is caused by the unseen assistant slipping the black shape into each vase immediately they are put back on the pedestals. As soon as the articles are put in, the assistant, from the back, removes the black shape and its contents, and exchanges it for the empty one. The watches and rings and any valuable articles are returned by hand. The other articles are taken out by the assistant, who, standing well back on the stage, throws them to the owners. This always causes great astonishment. The pedestal may be moved aside for ornamentation, or may now be vanished. Further effects may suggest themselves.

The assistant now retires for the black stick and the cockatoo. The latter is perched on the stick, and should be hidden behind the screen or curtain placed in front of the back opening.

On the command of the magician, the assistant thrusts the bird forward from behind the curtain

into view. Polly is now persuaded to walk up and down the stick by the simple process of tilting it up or down. The effect to the audience is that a cockatoo is invisibly walking in space without means of support. The magician now explains that no wire or secret mechanism is supporting the bird, and to prove it demands a hoop, which is produced in the same mysterious manner as the wand.

The hoop is now passed over, under, and all round the bird. It may be wondered how this is possible ; the method is simplicity itself. The performer first draws it right over the bird ; the assistant changes ends each time the hoop is coming towards him. The stick is placed upright when the hoop is required to be moved up and down. The evidence is conclusive. The performer now picks up his wand, and holds it towards the cockatoo. The assistant places the end of the black stick to the end of the wand, at the same time tilting it so that the bird walks on to the wand. The bird is then handed out for examination.

If necessary, it can be given away to anyone in the audience as a present ! It is placed in a white cardboard box (magically produced from a black cover) for the convenience of carrying. The box has a black interior, and is a double one. The assistant slips out the whole of this, and carries it off behind the curtain, and puts the bird in the cage whilst the magician is engaged tying up the box with white tape. This trick never fails to create roars of laughter when it is found that the bird has gone.

The skeleton is now magically produced, either entire or by showing the head first and then the body. This is done by holding a black cloth across the body, only exposing the head in the first instance. The skeleton can be made to speak sepulchrally with astonishing effect; although this might lend the idea that a second person is present, others may put it down to ventriloquism.

The skeleton now careers round the stage, the assistant working the legs and arms in the imitation of a dance. After this has taken place, the body may be dismembered by the assistant removing the limbs, and these float away in space (behind the curtains); the head can be made to jump up and down, nod, and act in a most ridiculous manner, which is, nevertheless, most weird and mysterious, the skeleton all the time standing out in silhouette against the blackness. Many wonderful effects are possible with a skeleton. The vanishing takes place by turning it round and showing the dead black; it is then carried off.

The performer now vanishes himself by accidentally dropping his wand; in bending down to pick it up he grips the top of a black cloth and lifts it up. The assistant, when he has straightened himself up, takes charge of the cloth, whilst the performer slips out of the back opening and speedily makes his way to the door, fires a pistol, and makes his way back to the stage.

## CHAPTER VII

### Making and Manipulating a Manikin Theatre

MANIKINS or marionettes are always an attractive and most welcome feature of an entertainment. The

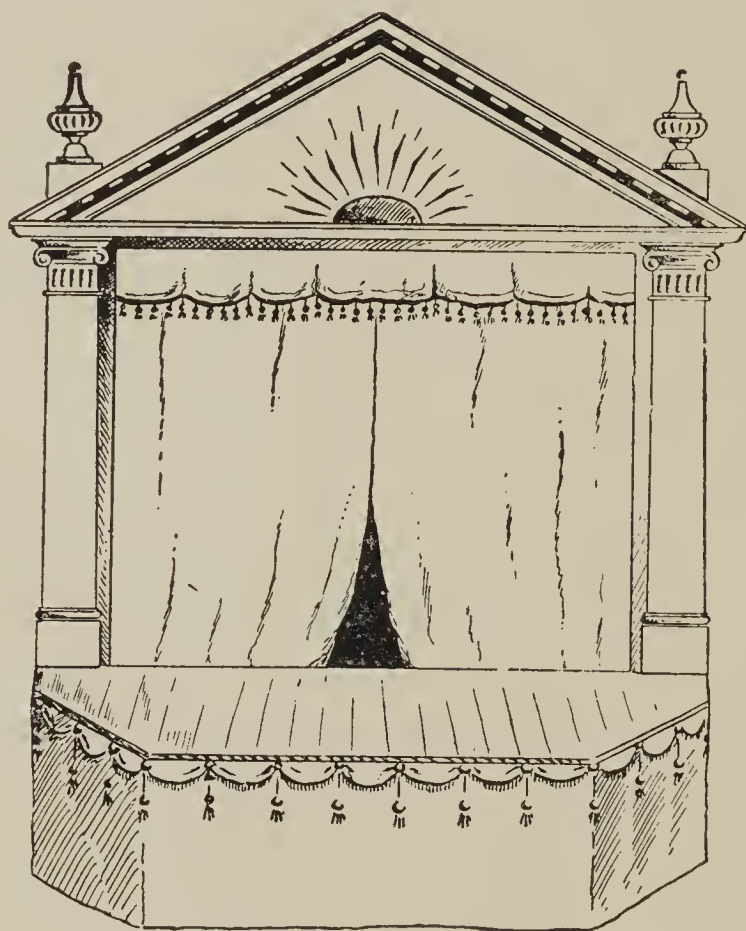


Fig. 73.—Manikin Theatre.

actual making of the theatre will present no difficulty ; the cost also is not a great matter, the principal expenditure being the scenery, and this may be



purchased very cheaply. The theatre is shown by Fig. 73.

**Theatre Framework.**—Fig. 74 shows a view of the framework. It is impossible to state any size, as this depends entirely on the size of the dolls or figures

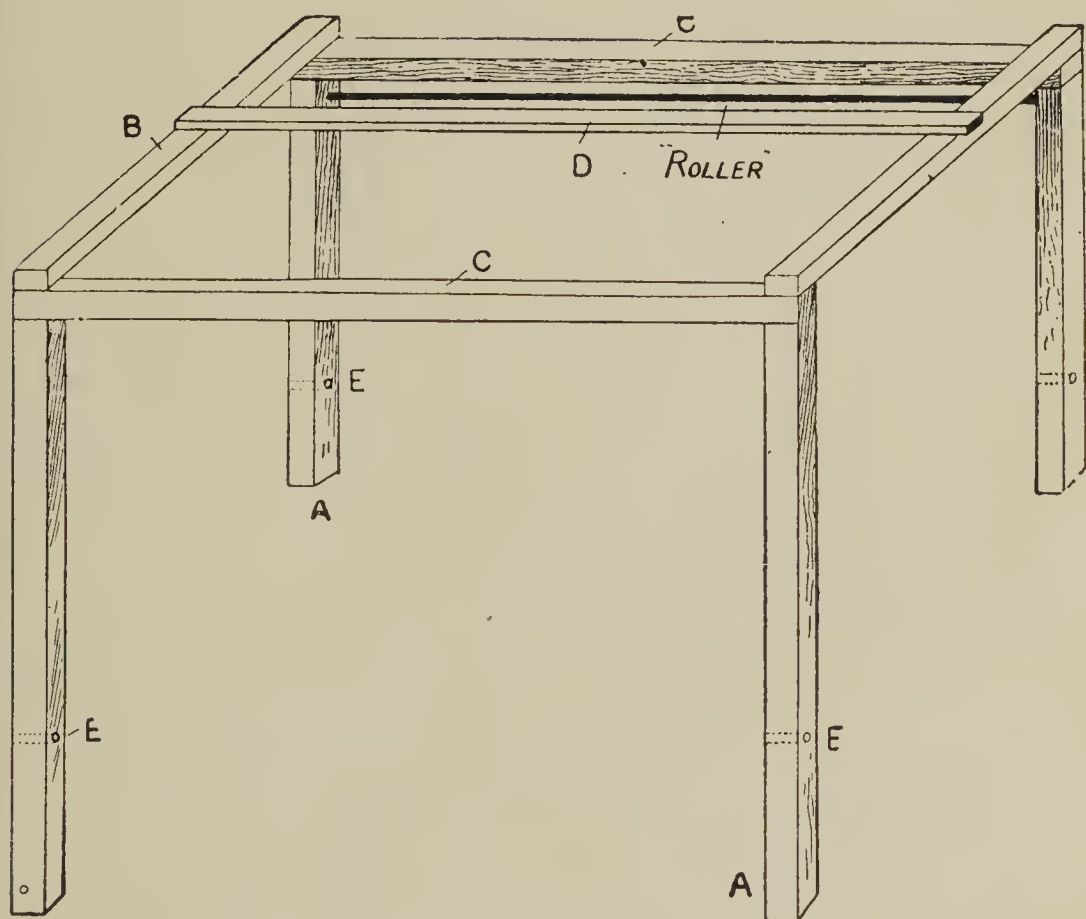


Fig. 74.—Framework of Manikin Theatre.

to be used. For a drawing-room 18-in. figures will be found quite large enough; concert and bazaar work, 24 in.; stage figures, 30 in. to 36 in.

For a drawing-room theatre, using the 18-in. figures, the stage front or opening should be at least 4 ft., to allow a perfect view and provide sufficient stage room for the figures. The framework should be made from light timber, having regard to the

fact that the theatre may require to be transported from time to time.

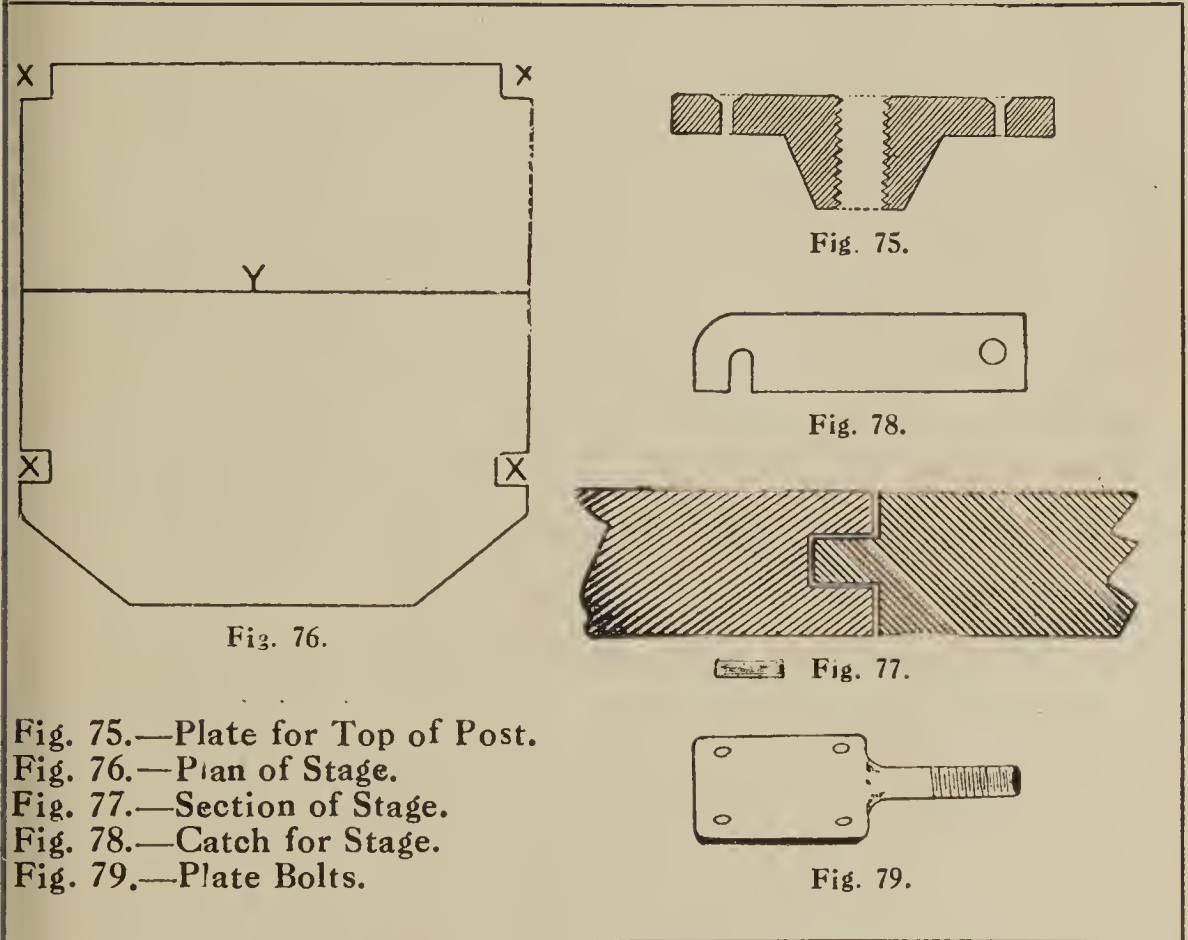
Four posts A (Fig. 74) may be made from stuff 2 in. by  $1\frac{3}{4}$  in. Two bearers C back and front and two side bearers B should be sawn and planed up. The whole is joined up by means of four long bolts which run through the bearers with the legs at each corner. A plate (Fig. 75) is countersunk and secured with four long screws into the tops of each post. A plate having an underpiece as shown is preferable. The bolts hold the bearers in position, and are screwed in with a spanner, a washer being placed beneath the head of each to prevent their sinking into the bearers.

Four holes E (Fig. 74) are made in each post to allow for the stage being bolted up. These holes must be  $\frac{1}{2}$  in. in diameter and placed at least 1 ft. 8 in. from the floor. This is most important, for the stage requires to be raised to allow the audience a clear view of the whole of the stage floor and figures throughout the performance.

**Stage.**—The stage (Fig. 76) should be made from  $\frac{1}{2}$ -in. stuff, the grain of the wood running from side to side; tongued-and-grooved boards are not recommended. A good quality whitewood or white pine may be used. The stage should be made in two parts, to facilitate packing. The front portion should be shaped as shown, and the parts x cut out to receive the legs. The two halves meet and should be provided with tongued-and-grooved edges (*see* Fig. 77) to prevent the stage sinking or lifting. The underside

of the stage is fitted with two light catches (Fig. 78). These are placed one on each portion of the stage, and the opening engages beneath the head of a round-headed screw.

Four plate bolts (Fig. 79) are screwed behind each



portion x cut away to receive the posts, the bolts projecting 3 in. These plates may be purchased in all sizes at hardware stores; or a local blacksmith will make them and put a  $\frac{1}{2}$ -in. thread on them for a shilling or so. Four washers are slipped on and the nuts screwed. The whole should now be a firm and steady erection. A batten D is placed on the framework 6 in. from the back.

**Proscenium.**—The theatre front, or proscenium, is next made, and this should be in three parts (see Fig. 80). It is best made from thin three-ply boards, usually  $\frac{3}{16}$  in. or  $\frac{1}{4}$  in. Each part is fixed to the framework by means of small brackets which slip into sockets screwed to the frame (see Fig. 81).

The proscenium is now decorated according to taste. It is, of course, left to the builder to choose his own decoration. A very nice method of finishing is to place narrow mouldings round both the inside and outside edges. A long panel on each side may be made with panel moulding, and two half-round pillars placed on each panel. Turned finials added, and the whole tastefully painted with white and green enamel, with a touch of gold in lines, would make the front effective.

A cheaper method, and one which will no doubt be adopted by those not so skilled in joinery, is to cover it with an art pattern wall-paper. Many beautiful patterns may be purchased, and these will look very realistic if properly laid on. Special sheets of fancy paper, such as imitation marble and fancy stonework, may be purchased; raised and satin puffed paper may also be had. Fancy dadoes illustrating nursery rhymes and fables may also be bought for the proscenium top.

Pictorial panels and centre pieces are sold very cheaply. Strips of hard paper may also be purchased, which, when carefully pieced up, will represent fancy columns or pillars.



**Curtains, etc.**—An ordinary roller 1 in. thick is provided for the back scene. The ends should have two long screws driven in and the heads filed off; holes are bored to receive them in the two back posts. The scene is nailed to this roller with fine tacks about 1 in. apart. The scene may be purchased, and is usually in four parts, and joined up and mounted

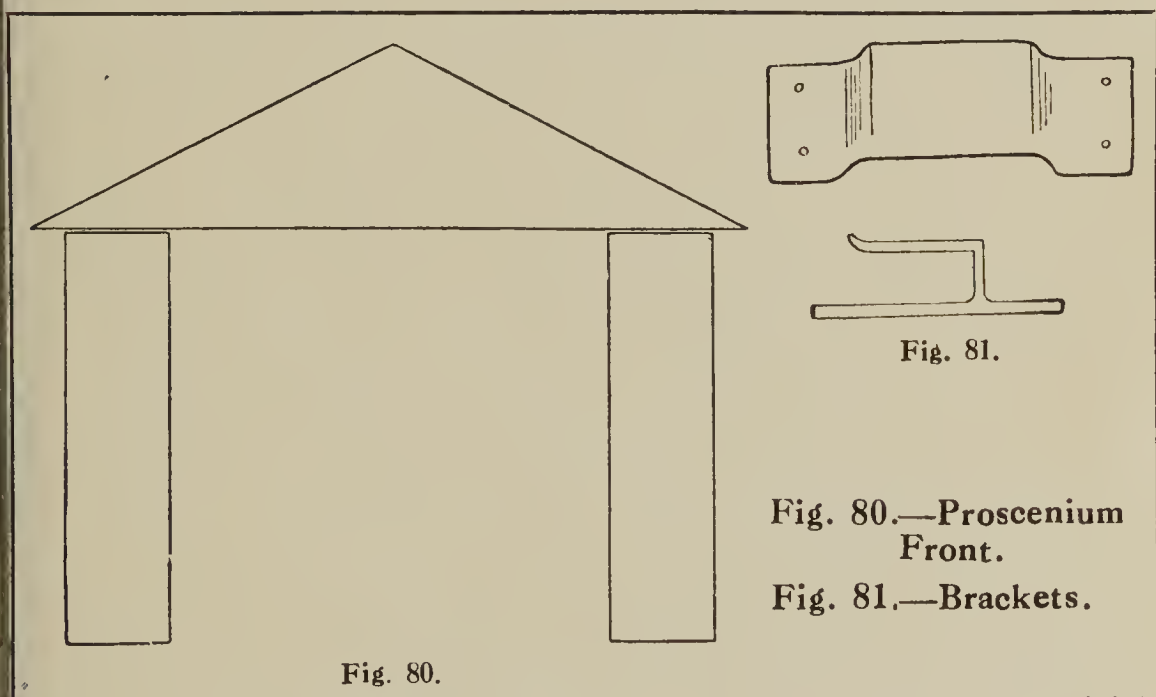


Fig. 80.—Proscenium Front.

Fig. 81.—Brackets.

on a piece of common calico. Care should be taken to avoid lumps or blisters, and the edges should meet exactly and not overlap.

To the front batten or bearer a short velvet curtain is hooked. This curtain should not exceed 9 in. in depth, and the curtain should be made from a rich-coloured velvet or plush. It may be either pleated or left plain; but, in any case, a decoration of yellow Madras edging will enhance the appearance when sewn to the edge.

Fig. 82 shows the proscenium or drop curtain. Most theatres are provided with a roller curtain usually of a scenic character, but as a manikin theatre only requires a curtain twice in the performance, a scene is not required. These curtains, when opened, take the place of side wings in small theatres, side wings being used to prevent a view of the back edges of the stage.

The curtain is made in two pieces, a good quality

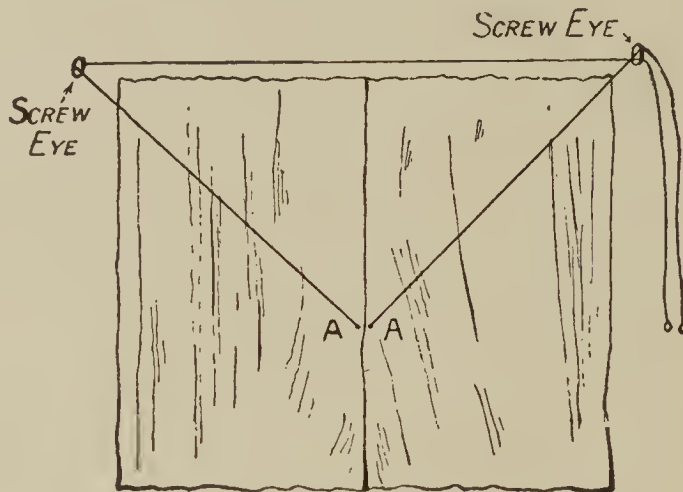


Fig. 82.—Proscenium Curtain.

velvet being suitable. The top is provided with rings which hook to a series of eyes screwed at the back of the proscenium. A cord is made fast to the centre A, and it passes through several small rings stitched on a length of broad braid and sewn at the back of the curtain. Two common screw-eyes are placed at the top corners above the proscenium opening. One cord is passed through a screw-eye and down the side. The other is taken up through the eye and along the top, through the second screw-eye and down again. A reference to Fig. 82 will make everything

clear. A pull on both cords will cause the curtains to open gracefully.

If side wings are preferred, these are added next, and placed in position midway between the bearer D (Fig. 74) and the front. They are made from  $\frac{1}{8}$ -in. ply wood, the scene being either painted on or pasted to it.

The under part of the stage is next completed. It is merely filled in with three pieces of board or curtain to prevent the audience seeing beneath the theatre.

**Lighting.**—Practical experience has proved that footlights are not so useful or desirable as scenic lights. The operator is advised to have one or two lights on small brackets fixed behind the front cross-bar C (Fig. 74). Small elfin lamps containing a large night-light are very suitable. These lamps serve a very useful purpose—that of providing light to enable the operator to distinguish the threads when manipulating the figures. If, however, the operator cares to add footlights, he can do so, but, in any case, they are not necessary.

**Figures.**—Fig. 83 shows the parts, ten in number, which are required to make up a perfect figure. The pieces are roughly carved to shape; as the feet and hands and head portions are seen these should be more carefully finished. When cut to shape they are given two coats of good paint. The feet are, of course, painted to represent boots; the hands are painted flesh colour, and the features traced in. A coat of

varnish is then given, and the parts are ready for fixing together.

The old method was to secure the joints by means of a pair of common screw-eyes ; but there are two much more effective methods. The first is by means of a pair of long staples and a ring. Fig. 84 shows the leg and thigh portions joined up by this method. It will easily be understood that the joints are quite free to move in any direction, whereas screw-eyes offer a large amount of resistance in their movements. It is not an uncommon occurrence to find that these screw-eyes screw out with the movements of the figure. The staples and ring, however, cannot come out, no matter how long the figure is used.

The other method is that known as "stringing." Fig 85 shows the method. A small hole is bored 1 in. down the joint, and a piece of stout catgut, having a knot on one end, is inserted and a tapered peg forced in the hole. The other end is tied to a staple driven securely in the other joint. It will be seen that the amount of play may be regulated by this method. The staples and ring method, however, will be found to act very well.

The figure is next dressed with whatever costumes the operator is going to use. These are best made up in fancy material, and made to take on and off easily. The patent fastenings used by dressmakers are recommended for swift-changing purposes, and are always easier and more suitable than buttons. Pins of any description are not to be used owing to the liability



of the loose threads catching in them when the figure is performing.

Unless the operator has plenty of figures on hand he is not advised to fix the clothing on permanently,

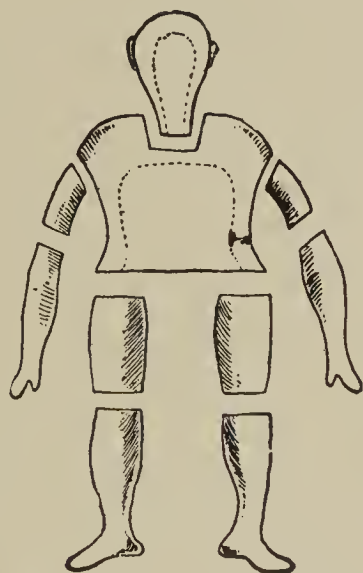


Fig. 83.—Parts of Figure for Manikin Theatre.



Fig. 84.—Leg Joint.

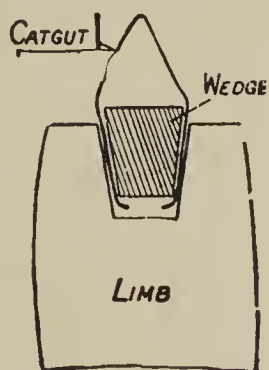


Fig. 85.—Method of Stringing Joints.

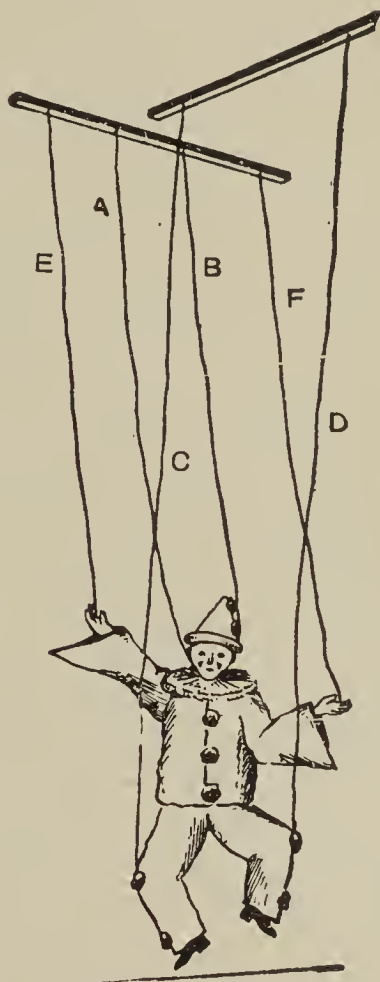


Fig. 86.—Figure Strung up.

for it is often that some original idea commends itself to the worker, and he must spoil the clothing if he desires to undress the marionette again.

The dress should be as loosely fitting as possible, to allow plenty of play for the limbs. The arms

and legs should be baggy, and the clothing should not be stiff. Perfect freedom in the matter of movements is desired; this should be thoroughly tested before the figures are "strung up." For the female manikins, the clothes may be as fanciful as the operator can afford; but two important points must not be lost sight of in the endeavour to produce a handsome doll. First, the leg movements must not be hampered by the use of tight-fitting draperies; second, be as sparing as possible with loose ornamentations, such as bows, sashes, and other trifles.

The threads which control the figures are often hanging and slack, and it is therefore as well to have as little as possible in the way to prevent their becoming entangled.

Dancing figures are often provided with "jingles," and these are really two gunmetal discs, which, when brought into contact with each other, cause a sound in the same manner as cymbals. The discs are the exact size of a halfpenny; in fact, halfpennies are an idea substitute for the real article. A fine hole is bored through the centres of the halfpennies, and they are loosely fixed with a flat-headed wire nail to the instep of the figure. The jingles do not "speak" when the figure is walking, but only when the feet are dropped firmly on the stage. Jingles are a great improvement in a dancing figure, and well worth the trouble of having them fitted.

**Stringing.**—The figures are now ready for "stringing" up, and although looked on by some as being

he most difficult part of the building up, it is in reality the easiest.

There are always six lines to a figure. The lines are in pairs : (1) The main or head lines, which support and carry the whole of the figure. (2) The hand lines, which control the movements of the arms and hands. (3) The leg lines, which operate the general movements of the figure such as walking, dancing, etc. With these three simple facts in view, the beginner cannot go wrong. If any more lines are used, they are for some special purpose, and should be operated separately.

The lines are made from very strong black silk thread. It should be tested before being used. The main lines A and B (Fig. 86) are secured to a fine staple, and driven in the side of the head just behind the top of the ear. These lines are securely attached to a piece of oval wood about 1 ft. long, and are known professionally as "perches." "The main" lines are usually tied about 3 in. from the ends of the perch.

The hand lines E and F are inserted through a hole made in the back of the hands with a fine bit used in an archimedean drill. The thread is secured to the inside of the palm by means of a minute staple. The loose ends are tied to the ends of the stick. It will now be understood that two pairs of lines have been fastened to a "perch," and these are responsible for two actions, namely, holding up the figure and the working of the arm movements.

The leg lines c and d are fastened or sewn to the

trousers of the male figures about 1 in. or so above the knee. Some operators attach the lines to small staples driven into the leg at this part, and then run through the clothing. The female figures, which are usually clothed in short skirts, have the leg line attached to a staple above the knee; but if longer apparel is necessary, then the line must be threaded through the clothing and fastened to the leg itself. In the case of the male figures, the lines must always be attached to the leg.

**Manipulation.**—The figure is now quite ready for its performance, and very little practice will enable the beginner to become proficient.

Before explaining the actual manipulating of the figures, etc., it will be as well to give a few valuable hints. Many amateurs and even professional workers spoil the effect of their performance by having the threads so stout that they are plainly visible to the audience. The argument that the audience know the actors are only dolls is a poor one. It should be the aim of every owner of a manikin theatre to have everything as realistic as possible. To this end the threads used must be as strong and as fine as possible. The back scene should be a dark one, not too dark but, for instance, a country scene with plenty of foliage and not too much sky. The usual scenes painted on pink or salmon-coloured backgrounds are not at all suitable, nor are they natural.

The clothing of the figures, too, should be studied. Negro characters are often clothed in a short white



smock or shirt. This is a great mistake, for the black threads are plainly visible against the white clothing. It would be much better to clothe the negro characters in striped clothing with knickerbockers on, and the stripes running horizontal, say yellow and black.

The majority of amateurs make the mistake of dressing female dancing figures in crinoline costumes. The dresses, however, interfere with the leg lines, and the figure dances in a very stiff and erratic manner. A single short skirt having many rows of deep frills beneath the outer dress will be found more satisfactory, and if the material is soft and flimsy the effect is the same. All clothing, male and female, should be made of soft materials, and be as slack as possible.

The manikins should be in a handy position ready for each turn. The practice of having them hung on hooks by their crutches is not recommended, as the lines often become entangled with one another unless great care is used. The professional operator often carries his dolls ready for the performance in a box, and each figure is lifted out when required by their perches. Another method is to lay them on a board or trestle, behind the back scene; or if this is not practicable they are placed in a row under the stage. Several other methods are used, but any of the above-named will be found very suitable.

The light should in all cases come from the front of the theatre. Footlights or scenic lights may be as bright or as close to the performing marionettes

as the worker wishes ; but it is most important that no lights appear behind the figures.

The use of coloured slides placed in front of the scenic border lights often enhances the effect in such scenes as dances, ghost scenes, etc. The slides are easily fitted into slots which are screwed on the cross-bar in front of the lights.

The operator stands at the back of the theatre in an elevated position. Two chairs placed side by side will serve the purpose admirably. The elbow of the operator should rest on the back cross-bar and the entire view of the stage floor can be seen from the top. The figure is then lifted up and placed at the side of the theatre (behind the side wings or curtain), and lowered gently on the stage. The use of the cross-bar or batten (*see* page 75) will now be apparent. It is used for resting the sticks or crutches. The crutches being oval do not roll out of position should the operator leave them at rest. Fig. 8 represents a figure "strung up" ready for working. The left hand grasps the leg-line crutch, while the right hand takes the crutch connected up with the hands and head. The hold should be firm but easy. Avoid gripping the crutches tightly, as this prevents the free movement of the lines.

To cause the figure to "walk on," the operator lifts the head crutch, thus tightening the head line until the feet of the figure touch the stage and the body is erect. Now bring both hands level with one another and move them forward, at the same time

moving both crutches with a wave-like movement. This causes the legs to lift and up down, also at the same time the arms are slightly moved, as is usual when walking. These movements, if rehearsed once or twice, will be mastered without any difficulty. If the operator wishes to make the figure walk quickly or run, he will simply have to move the sticks quicker. To make the figure turn round, the head crutch is tilted, and the hand holding A (Fig. 86) is given a quick jerk upwards and back again at the same time. This causes one leg to lift a little, the movement therefore appearing very natural.

It will be understood that this figure, strung in the method explained, will dance and keep perfect time to music. Some little practice is required at first to acquire the correct movements. The leg lines are kept moving in sharp jerks in time to the music; this causes the feet to be lifted quickly and brought down smartly. The movement for the arms is a very important one. The crutch should be carefully held in one position to prevent the figure falling or dropping. The crutch is then moved outwards a little, first from one side to the other, thus stretching the hands out from the body, which is a natural movement. Some performers, especially beginners, make the mistake of moving the arms in the same manner as the legs. This is not the correct movement, but it may be given once or twice. High kicking may be imitated by jerking the ends of the leg crutch upwards.

The greatest difficulty the beginner experiences is



the tendency to lower the crutch B (Fig. 86) when acting. This crutch is responsible for the natural grace of the figure.

There are many figures which require extra lines and it must be noted that if any extra movement is required, a "special" line is necessary. These extra lines are moved by the fingers of the hand engaged with the head crutch. For instance, suppose a figure is required to nod during its performance, the head lines are discarded, and two shoulder lines are used in their place. A single line is then attached to the head; this line is left a little slack, this slack being taken up by pressure of the finger. It only requires a touch of the finger to make the figure nod or look downwards, etc.

The many different positions which will require extra lines will not cause any difficulty; a moment's careful study will tell the worker exactly the position in which to place it.

Should the operator work two figures at once, one of them may be made to stand still, sit or lie down, by resting the crutches on the cross-bar while the other figure is performing.

The main difficulty—and, indeed, it is the stumbling block to beginners—is the lowering of the figure. To prevent this, an excellent piece of apparatus has been invented which possesses several good points; but the beginner is first advised to become thoroughly acquainted with the various movements and general working of the figures before he changes the ordinary



method for the new. This latter is known as the "bobbin and levers." It is a light piece of board A (Fig. 87), which slides along two bars B and C. Four runners D hold the board from slipping. Holes are drilled through the board, care being taken to remove any splinters from the underside, which would injure the threads. The lines E are connected up through these holes, the ends being provided with bobbins F, or small knobs having pieces of thin felt glued to their

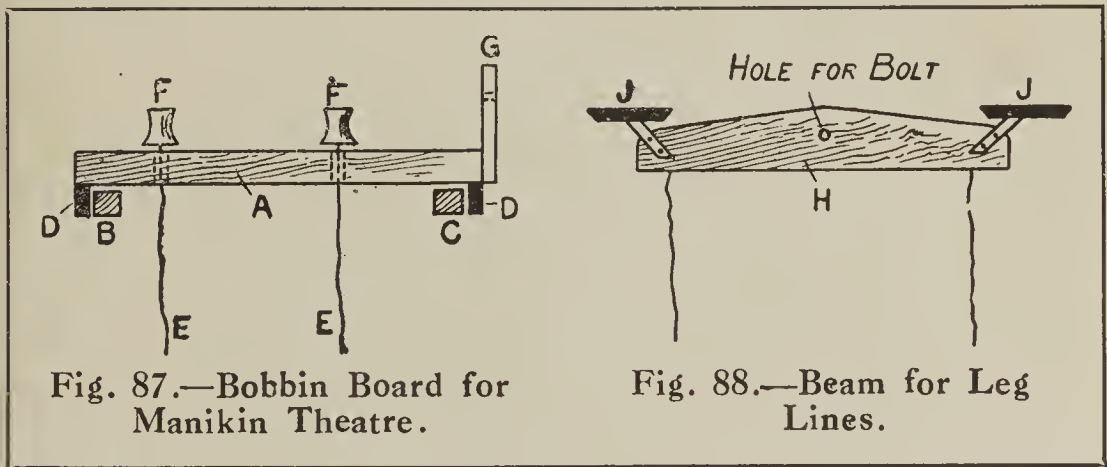


Fig. 87.—Bobbin Board for Manikin Theatre.

Fig. 88.—Beam for Leg Lines.

bases to prevent them "talking" when brought into contact with the board. A small pillar G, or, if the worker prefers it, a pronged fork, is screwed to the back part of the board. Attached to the pillar or between the fork is centred a piece of wood H (Fig. 88) 2 ft. 2 in. long, the ends of which are fitted with flat wooden discs J. This is called "a beam," and the leg lines are attached to the beam about 3 in. from each end. The whole is now ready for use. The beam is worked by the elbows of the worker, thus leaving both hands free to manipulate the whole of the bobbins connected to the lines. The reader will

understand the advantage this board has over the "clutch" method; as many lines as desired may be used without fear of any mishaps occurring.

Some performers have a wire or weak steel spring screwed behind each bobbin, so that the bobbins may be clipped into it after the manner of a common toolholder. This is, of course, useful where some part of the figure has to remain stationary while other movements take place.

A revolving board is sometimes used for figures doing fancy dances. "Swivelling beams" are also used. In fact, the various minor wrinkles employed by operators are legion, and to enumerate them all would occupy many pages. The information given, however, will be quite sufficient to enable anyone to give an ordinary performance after a few weeks' practice.

Eight or nine figures would be sufficient for a performance. A few suitable figures would be: Female dancer, male dancer, coon (fancy dancing), schoolboy, soldier, etc. Single figures, however, do not give a complete finished performance, and it is always advisable to work a little love scene, the words of which are sung by either the operator or his assistant.

Specialities also enhance the performance; in fact, the ordinary marionette performance without a novelty of some kind is regarded as a children's entertainment. The clog dancer, which is simply an ordinary figure shod with aluminium and dancing on a piece of glass or slate, takes exceedingly well, especially if accompanied by popular music.

## CHAPTER VIII

### A Living Marionette Theatre

THE building of a marionette theatre (Fig. 89) will no tax the skill of the handyman. It is what is termed in the profession "a shake up," that is, all the parts are



Fig. 89.—Living Marionette Theatre.

so made that they do not require knocking and hammering into place, and no nails or screws should be used. Fig. 90 shows the framework of the theatre devoid of fittings.



**Framework.**—The framework should be made from sound white pine or whitewood. The corner posts should be of 2-in. square material. The height depends entirely on the size of the figures it is proposed to work with. The height of the stage from the floor of the room should be about 2 ft. 4 in., and the height of the opening of the stage would be not less than 3 ft. ;

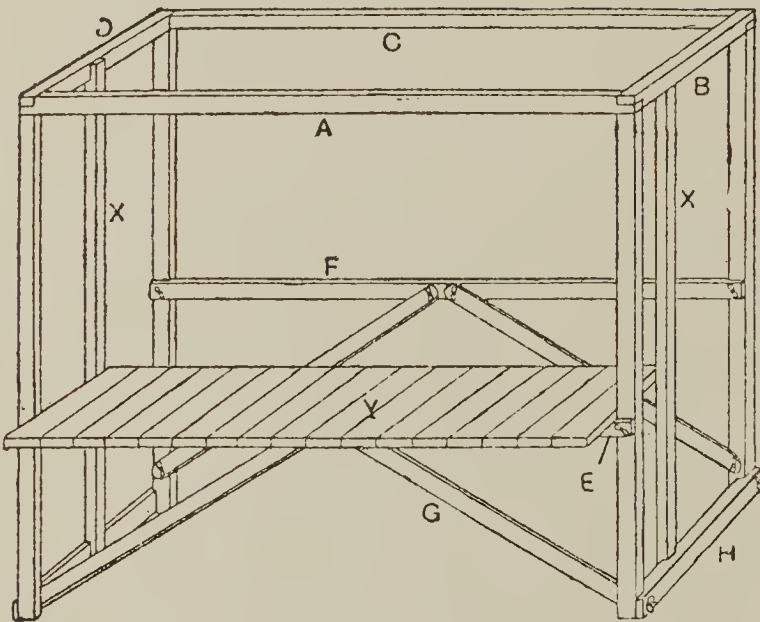


Fig. 90.—Framework of Marionette Theatre.

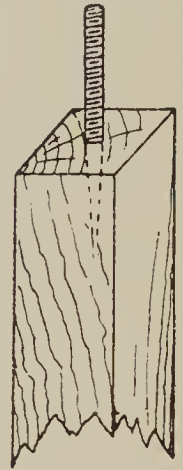


Fig. 91.—  
Method of  
Joining  
Corners.

but 3 ft. 6 in. to 4 ft. would not be out of the way, and provide ample stage room for the figure and scenery. The width of the stage front is from 5 ft. to 5 ft. 6 in. Therefore the corner posts would be set apart 4 in. beyond this measurement. Definite sizes are not set down because the manipulator will probably prefer to regulate the sizes himself. In any case, the proscenium covers the whole of the front, and a few inches either way will not matter. The sizes given,



however, will be found most suitable for both drawing-room or stage work.

Four top rails A, B, C and D (Fig. 90) are required. These should be  $1\frac{1}{8}$  in. in thickness and 2 in. wide, sawn to the exact length, with  $\frac{1}{2}$ -in. holes provided at each end to allow an iron bolt to be inserted at each corner into the posts. Fig. 91 shows the method of joining up the corners. Two battens E and F (Fig. 90) are placed back and front between the corner posts, and are fixed by means of bolts and wing-nuts. A washer is slipped on before the wing-nut is tightened, to prevent it sinking into the wood.

Four short stays G are fixed front and back, also by means of bolts and wing-nuts; they are to keep the front and back perfectly rigid. These stays must be placed on the inside as shown in Fig. 90. Two bottom bars H are provided and bolted to the sides. The battens X are placed as shown, and securely fixed by means of bolts to the top and bottom cross-bars.

**Stage.**—The stage Y extends beyond the front 6 in., and terminates half-way across the battens X. The stage must be made of well-seasoned whitewood with cross-bars screwed beneath it to prevent warping (*see* Fig. 92). The stage at the front rests on the batten E. Two  $\frac{3}{8}$ -in. wrest-pins J (Fig. 93) are screwed up through the batten into the stage, small screwed plates being provided for their reception. The back of the stage is supported also by means of two wrest-pins K inserted through the battens X into the edge of the stage.

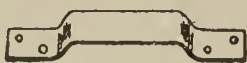


Fig. 97.—  
Socket.

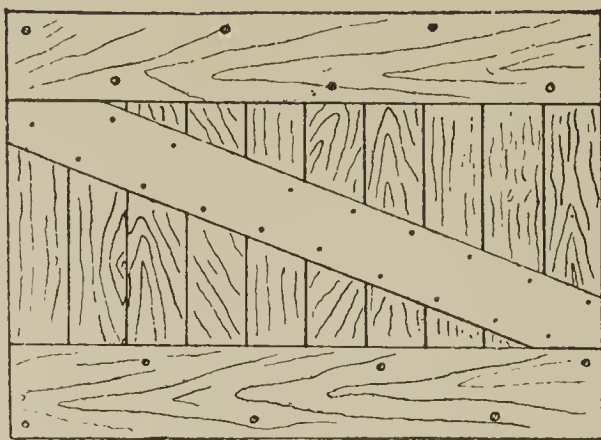


Fig. 92.—Stage Floor.

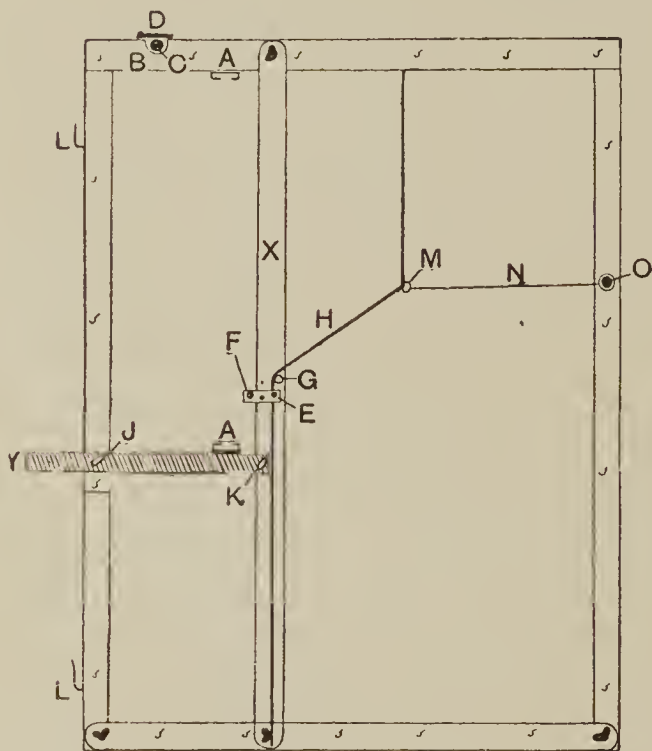


Fig. 93.—End View of Framework.

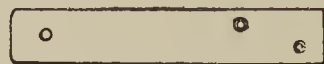


Fig. 95.—Iron  
Plate.

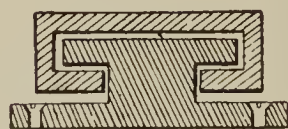


Fig. 94.—Slide.

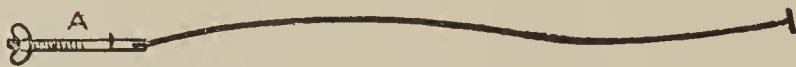


Fig. 96.—Wire and Drawbolt.

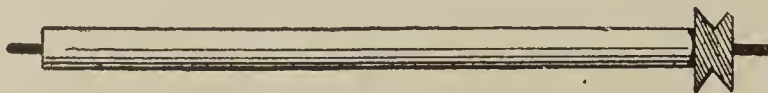


Fig. 99.



Fig. 98.—Details of Bracket and Roller.

Fig. 93 is an end view of the framework, and shows the position of the black background. A slide is provided for the wings to work in at A; Fig. 94 shows the necessary details. This allows the side wings to be pushed outwards or inwards, and serves to hide the edges of the background and framework, as well as being ornamental.

A front scenic border is placed at B (Fig. 93). The scenic border is tacked to a wooden rod or roller c, and may be rolled up for convenience in packing. A semicircular groove is cut in the top cross-bars to receive the roller c, and a small catch D keeps it in position. A small iron plate E (see also Fig. 95) is next made and provided with two countersunk holes, and is screwed to the battens x (Fig. 90). These plates must be the exact height to which the worker wishes the neck of the doll to reach. Through the hole F a fine but strong steel wire should pass through the plate on the opposite side. This wire is black and therefore invisible. A flat disc is attached to one end of the wire, and the other end provided with a threaded bar or bolt A (Fig. 96). The wire can, of course, be tightened by turning a wing-nut on the outside of the plate. A hole G  $\frac{3}{4}$  in. in diameter is made in the batten x to allow a brass rod to slide in. The black background H passes over this rod. Cup hooks are screwed outside the framework on the sides and back as shown in Fig. 93. These are for hanging black curtains to exclude the light as much as possible. The top is also provided with a black curtain, and a

few upright pegs should be placed to drop this curtain on. The framework is now complete.

**Proscenium.**—The proscenium front is the next work to be undertaken, and this should be made from three-ply wood  $\frac{3}{16}$  in. thick, and made in two portions. The ply wood is laid out in sheets (usually 4 ft. square), and the shape of the proscenium marked out. It is cut out with a fret saw, and placed together on thin battens; it is then decorated according to the taste of the performer. In preference to painting by hand, a very good quality wall paper can be laid on and made to look very real and artistic; in fact, this method is highly recommended unless the operator has the work executed by a decorator. Proscenium paper may also be purchased, and it includes many excellent shades, designs, and qualities. A puffed satin paper makes an excellent proscenium front, and is far superior to painting.

The proscenium front shown in the illustration (Fig. 89) should be hung on the framework by means of flat hooks L (Fig. 93) fitting into sockets (see Fig. 97), which are screwed to the proscenium back.

**Curtains, etc.**—The curtains and scenery will now be dealt with. It is a matter of choice to the performer whether he prefers a drop curtain or a drop scene, or if he prefers both. The writer in any case recommends a drop scene. The audience whilst waiting for the next turn can be admiring a beautiful garden scene, whereas if a drop curtain were used, it



is very monotonous looking at a plain velvet curtain between the acts.

The scene usually is in sections, and requires to be glued to sized canvas or calico. It is fixed on a wooden roller having a grooved pulley at one end, and it should be fixed behind the proscenium. It works in the same manner as an ordinary window blind, and is operated through the theatre by the manipulator. Two brackets (Fig. 98) are screwed to the top cross-bar for the roller (Fig. 99) to revolve in.

The drop curtain is perhaps the most puzzling item to the beginner, and it is seldom an amateur ever succeeds in making a perfect job of it. The task, however, is a simple one, and can be explained in a few words. Fig. 100 is a diagram of the curtains. A is a batten which is nailed over the opening at the proscenium back; and B are pieces of thin rod with bent ends secured in the batten. C and D are the curtains, and the top edges are supplied with small brass rings 3 in. apart. The rings are threaded on the rods. E and F are pieces of braid 1 in. wide, having eight rings sewn at intervals. Two pieces of cord G and H are procured, and one end is tied to the bottom-most ring and threaded up, and is passed through a common staple J and along the top through another staple K and down. The other is also threaded up, but is not crossed over the top, but brought straight down through the staple K. A pull on the cords G and H will open the curtains, and a quick tug will slide the rings along the rods and disclose the whole

view of the stage, if necessary. The proscenium or fancy curtains used for ornamentation are not necessary in living-marionette theatres. If used they are permanently nailed to the back of the proscenium.

The drop and front curtains are made from velvet, any colour the performer chooses; but the edges should be trimmed with a heavy cord or fancy edging. The drop curtains may be supplied with a 6-in. flap at the top, and trimmed with banner edging or tasselling. Two dummy tassels may be sewn to the front of the curtain.

The most important feature of the theatre is the background, and this is best made from black velvet or dull satinette, of a good quality. It is, of course, the width of the framework; the lowest portion begins an inch or so below the stage. Rings M (Fig. 93) are sewn in each corner and three along the bottom, and are hooked to cup hooks screwed into the back edge of the stage. The loose end is carried upwards over the brass rod. Fifteen inches farther on at the back of the velvet a length of braid should be sewn, and attached to the braid are several strong tapes N; these tapes are provided with brass rings at the loose ends.

An iron rod O passes through the back framework, and is threaded through the rings. The top of the background is carried upwards again, and in the corners are sewn two rings, which are hooked to small hooks screwed inside the battens. In the centre of the sloping portion a slit is provided for

the head of the performer to be thrust through, so that the throat of the performer touches the rod and his chin hangs over the wire. Four slits are made in the background to enable the operator to work the arms and feet, which are attached to stout sticks. A glance at the illustrations will make these details clear.

If the operator intends working more than one figure, with the aid of an assistant, then additional holes and slots must be cut. The holes for the head are usually drawn together with elastic to exclude the light when the head is withdrawn and also to grip the neck slightly. The front of the theatre beneath the stage should be closed in with a piece of either black velvet or satinette, on which the performer can have his name in gold spangles or gold paint.

The stage should have a row of footlights, usually six or eight. These are made from thin sheet-brass, and are silvered on the inside, the outside being painted to match the decoration. Fig. 101 shows a section of a footlight; an ordinary wood screw is soldered to the base, and screwed into the floor of the stage. Short fancy candles are suitable for illumination. The use of gas is not recommended; it is looked on as a nuisance for drawing-room work, and gas is not always available. Gas also entails the necessity of carrying an iron jet pipe and an indiarubber connection.

Finally, the outer curtains are fixed on; these may be of any opaque black material; they are not generally seen by the audience, and should be made to take on and off easily.



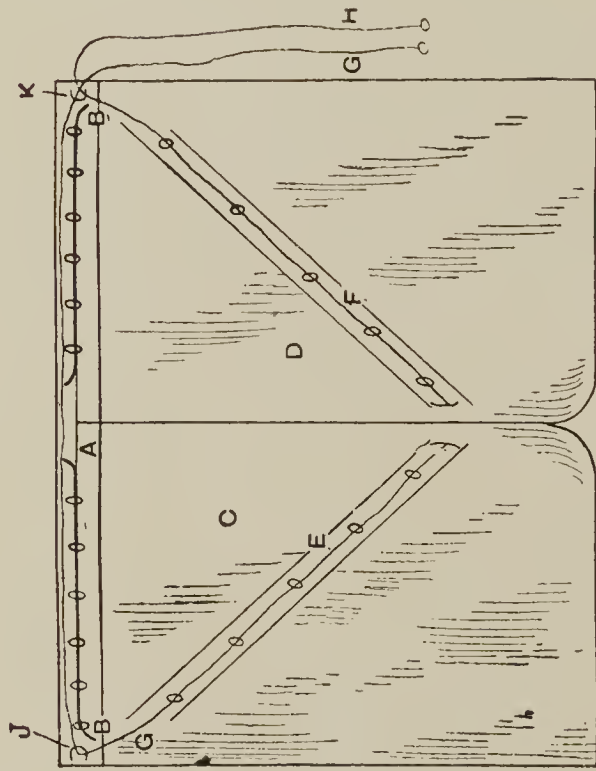


Fig. 100.—The Drop Curtain.

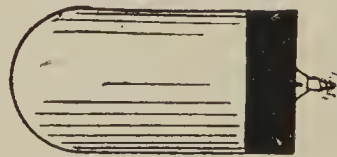


Fig. 101.  
Footlight.



Fig. 102.



Fig. 103.



Fig. 104.

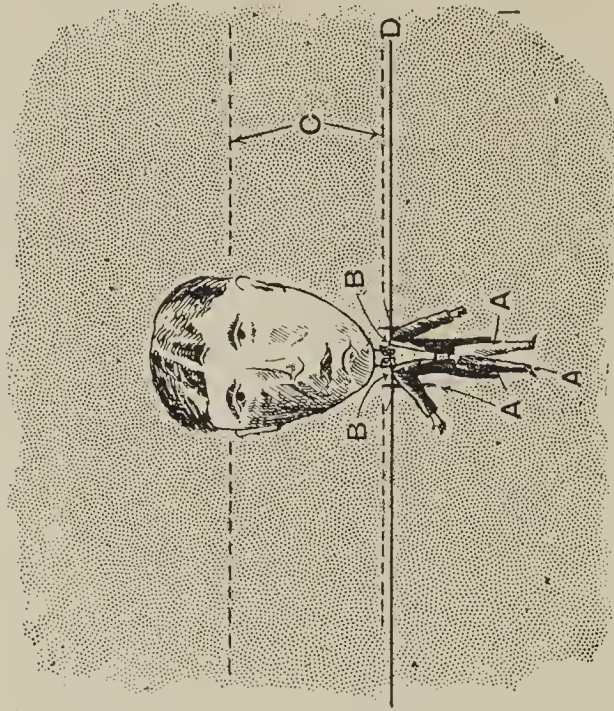


Fig. 106.—Figure on Wire and Performer  
in Position.

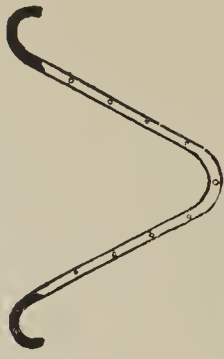


Fig. 105.—Wire for  
Neck of Doll.



**Figures.**—The making of the figures is probably the simplest task to be undertaken. The size depends on the height of the hole in the cloth through which the performer's head appears. The black wire is, of course, placed exactly the height to which the neck of the doll comes to.

Five parts are required to make up the doll: Two hands, two feet, and the chest or body part. Figs. 102 to 104 show these parts in detail. The feet are best made from a hard wood; the hands and body from a very light wood, such as white pine or bass-wood, the latter for preference. On the back part of the neck of the doll a stiff wire or hanger is bent as shown in Fig. 105, and is secured with fine screws. This enables the figure to be drawn along the wire and to be always accessible. The hanger must, of course, be painted dead black to prevent it being seen. It is in most cases hidden by the neck drapery of the figure.

Some performers prefer to have the hands and feet worked by short sticks, or light metal handles, or levers. The feet are best provided with these; but the beginner is advised to use hollow arms in place of the usual sticks. The advantages are many. The arms may be worked by inserting the first finger down the hollow part, and it will be perceived that the operator can have one hand free to work the feet. Certainly, the beginner will find he is restricted to only two motions at one time; but a little practice will soon overcome the difficulty, and the move-

ments will appear very natural. Fig. 106 shows the figure on the wire and the performer in position. shows the position of the slits, B the hooks, C the slanting portion of the background, and D the wire.

The arms are attached to the body by means of a pair of screw-eyes fixed one inside the other. The doll is dressed with the costume, and the feet are permanently attached to the trousers. Slits are now cut in the black background, through which the levers of the arms and legs are placed.

The feet and hands of the figure should be painted to represent boots, etc., and finally given a coat of hard varnish. The colours of the costume should be as glaring as possible, and the dressing up of the figure should be as burlesque as possible. For instance, the coster should be provided with a pair of unmistakable bell-bottom trousers, and large-size pea buttons liberally added in rows. The edge of the coat also should be provided with these buttons as well as the rest. A huge watch chain completes his attire. "The tipster" is a favourite character, and a suit of very loud checks, not ordinary checks, but something that can be seen by the audience, must be provided. As the performance is a humorous one, these eccentric designs all tend to provide amusement.

**Manipulation.**—Having made the figures, it will be necessary to give the learner a few hints on working them. The position of the body, when the head is inserted through the hole, should be in an easy and comfortable attitude; the body cannot, of course,

be upright, and at the same time it should not be doubled up. A slight bending forward of the body is all that is necessary, and as the performer is not called on to stay in this position longer than five minutes at a spell, the work is not likely to prove irksome. The hole in the slanting background should be "gathered up" with a piece of elastic for the purpose of excluding any light. The space in which the performer is working should be made as dark as possible, so that light cannot be seen through the arm and leg slots.

It is advisable that the performer should wear a black cloak down to the feet; also a pair of lady's long black gloves to the elbow, and a black muffler or scarf about the neck. This latter is indispensable, as it prevents too much of the performer's neck being seen.

The operator's face is made up with grease paint and wigs, as explained in an earlier chapter. The worker's make-up box, which is fitted with a mirror and grease paints, should stand on a chair or box. A candle and box of matches should be handy, and the face can be made up after each turn.

The dancing and movements of the figure can only be learned by practice. A few hours' practice in front of a mirror will do more than the criticism of all one's friends would do in a lifetime. Practise facial motions in front of a mirror whilst working the figures, just as would be done when performing before an audience. Whilst singing a song "put yourself into it"; that is, give way to the music.

## CHAPTER IX

### How to Make Ventriloquial Dolls

FIG. 107 shows the exterior of a man's head when finished. The doll can be made to suit any character, and if the difficulties of making one figure are overcome, with a few alterations of dress, wig, etc., the characters can be changed accordingly.

First make a clay model of the head in two parts (see Figs. 108 and 109). A useful size for the head is 6 in. long and 5 in. across at the widest part. This size can be varied at discretion. In making these models be careful to see that the two halves exactly coincide, as they have to be joined together later. A good method of ensuring this is to draw the outlines (in pencil) of the proposed models on the modelling board, and then to keep the clay from encroaching or coming within those outlines. When the clay models are moulded to the worker's satisfaction, they must be left until quite hard.

Next thoroughly oil the surface of the clay two or three times. Take plenty of thick brown paper, and soak in water until quite pliable; then tear (not cut) into pieces about 3 in. square, and place them one after another on the surface of the oiled clay, overlapping and pressing them well down into the





Fig. 107



Fig. 110

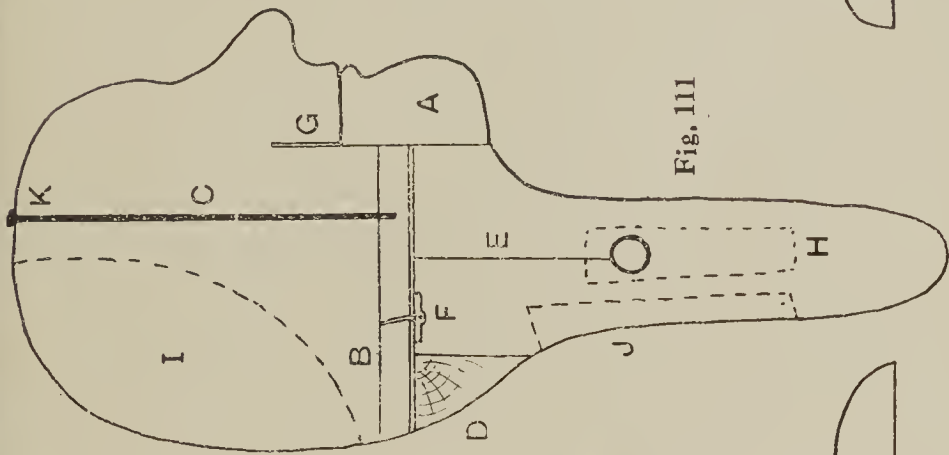


Fig. 111

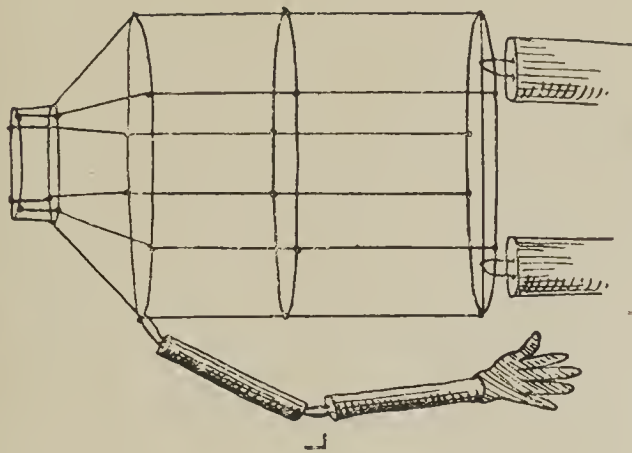


Fig. 112



Fig. 108



Fig. 109

Figs. 107 to 112.—Details of Ventriloquist Doll.

hollows of the modelled head. When the model is completely covered, brush a coating of hot glue over the whole. Begin again, and place more paper over the first layer. This time use a different shade of paper to show when the first layer is completely covered. Give another coating of glue, and continue as before until from six to eight layers have been laid on. Do this with both halves of the head, and dry thoroughly, when the paper can be removed from the model in the form of a stiff mask.

Now place the two halves together, and glue a strip of calico down the join each side of the head to hold them firmly together.

Fig. 110 gives a rough idea of how to model the ears, and it is important that the back should be made to stand out, while the front must be just the bare thickness of the paper. In modelling the ears note that the shaded parts of Fig. 110 are the places to hollow out. Glue these on to complete the exterior of the head.

It is now necessary to cut away with a sharp pen-knife the parts shown at dotted lines H, I, and J in Fig. 111. The piece I is the only part which will not be replaced. Note also that part H is cut away on the right side looking from the back of the head which will be facing the performer in manipulating the figure.

Next cut out very exactly the chin, extending from each end of the lower lip to immediately below the chin. Fig. 107 and A in Fig. 111 will show which parts

to cut out. Over the edges of this piece it is advisable to glue some stiff paper, overlapping about  $\frac{1}{8}$  in. (see dotted lines in Fig. 107), so that when the chin is in position again no space will be seen where it joins.

A study of Fig. 111 will now make clear the simple mechanism in the head, by which the simulation of speaking is obtained. A is the movable chin and mouth, and B is a bar of wood extending from the back of the head to the chin, and is firmly fixed to both. The bar is in two pieces, being hinged at F underneath, so that the front can move down and up. D is a piece of wood glued underneath the fixed part of B to strengthen it, and C is a piece of strong elastic connecting B and K. The mouth is opened by pulling the cord E; on releasing same, the mouth automatically closes by means of the elastic C. H is the opening through which cord E is grasped, and G is a piece of cardboard or wood, painted red, and fixed in front of the elastic C to hide it from the audience. Some teeth cut out of tin and painted white can be placed inside the lips, if desired.

It now only remains to make the body, and this is easily made with thick galvanised wire, as shown in Fig. 112. The arms can be made of wood, and joined on (as in Fig. 112 at L) by pieces of leather. The legs are made in the same way. The hands can be stuffed gloves, and the feet padded boots. An old suit is soon altered to fit the figure, an opening being left at the back.

## CHAPTER X

### The Legless Lady Illusion

THIS illusion embodies several inventions of a most ingenious order, and although somewhat costly to construct, the results obtained fully justify the troubles and expense of production.

The spectator, who is not permitted to approach nearer than the barrier A (Fig. 113), observes a lady poised on a stand B, placed in the centre of what appears to be an ordinary wooden table. As far as the barrier permits him, he may look under the table and view the background beyond and between the legs of the same. It matters not from what viewpoint he may select to look, four legs are visible. He is also able to see beneath the small stand on which the lady rests. In the face of these facts, it would seem impossible that the lady really possesses a pair of legs just as any ordinary person, and yet this is so !

The secret of the trick will be discovered on reference to Fig. 114, which gives a plan of the apparatus. The table top M is supported on three legs only—C, D, and E respectively. These legs are grooved as shown, to receive plate-glass mirrors K, which rest on the floor and extend to the under side of the table top, the relative angle of these mirrors being  $90^{\circ}$ .



A dummy leg is placed at G and H behind the lamp pedestals I and J, and is therefore hidden from view. The lamps standing on the pedestals serve to illuminate the subject; but these are situated in this par-

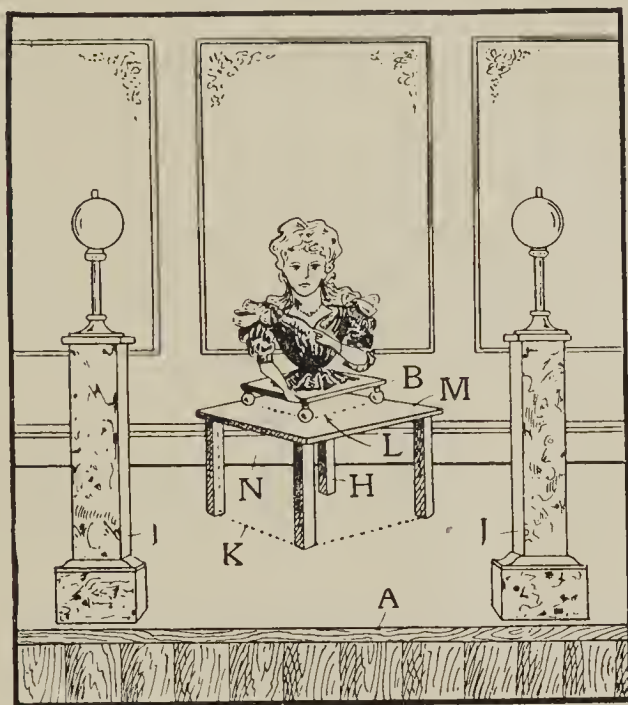


Fig. 113.—General arrangement of "Legless Lady" Illusion.

particular position more especially to screen from the observers' view the dummy legs G and H.

The exact position of the dummy legs is a matter of extreme importance, insomuch that an image of each is to be seen in the mirrors. Thus, when the observer is looking from the position P, he should be able to see an image of G at the point F. Should he walk from P to Q he will lose sight of the image of G midway, when the front leg D will hide it. As he proceeds to move still further to the right, an image of H will come into view, and will also occupy, or appear to occupy, point F. By this he will be led

to believe that it is one and the same leg he has been looking at, for nothing could be more natural. To further preserve the illusion from detection the skirting N (Fig. 113) is painted on the inside face of the two lamp supports I and J, so that the reflections of this are seen in the mirrors K and register exactly in a line with the other and real portions of the skirting seen on each side of the table.

Finally, the floor of the apartment is covered with a checkered pattern linoleum, and this is so placed that the squares are repeated by reflection in the mirrors so as to continue the pattern.

The table should be so placed in relation to the pattern on the floor that the mirrors exactly bisect the squares so that half a square with its reflection makes up a complete square. Two other mirrors are fitted under the stand B indicated by the dotted line L (Fig. 113). These mirrors being at an angle to each other of  $90^\circ$ , act in a similar manner to the larger mirrors under the table, so that one seems to see under. In the centre of the stand top a circular hole is made just large enough to enable the lady to put her head and shoulders through, down to her waist. The frilling round her waist is now spread out to conceal the hole. The lady should be careful not to lower her hands below the level of the stand top, otherwise a reflection of the hand would be visible in the mirror, and the secret would be out.

The barrier A, which may be constructed of match-board nailed to a strip of tile batten, must be of

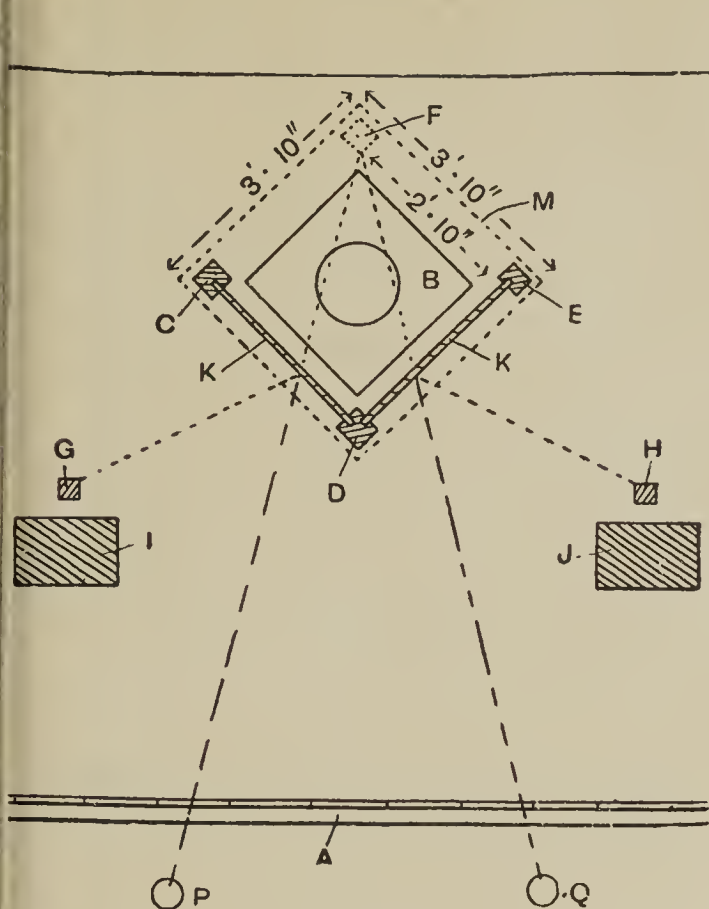


Fig. 114.

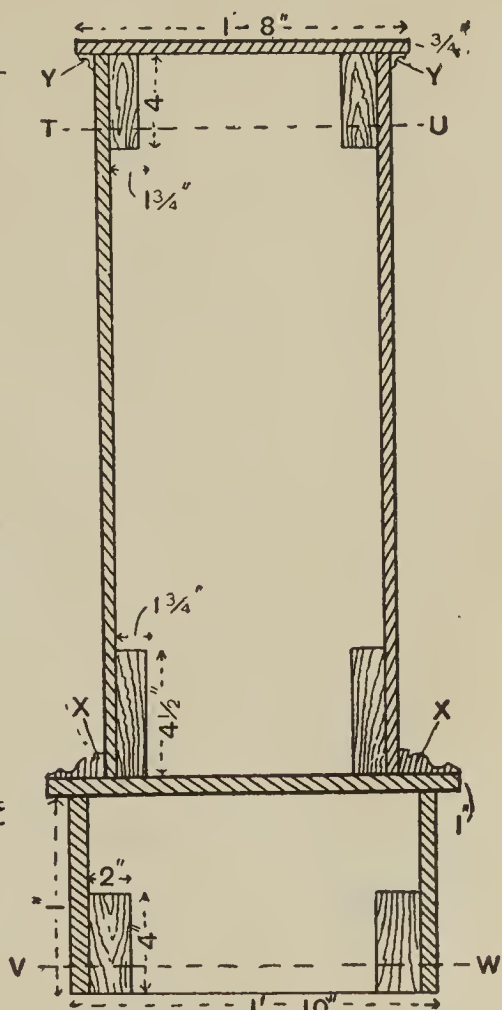


Fig. 117.

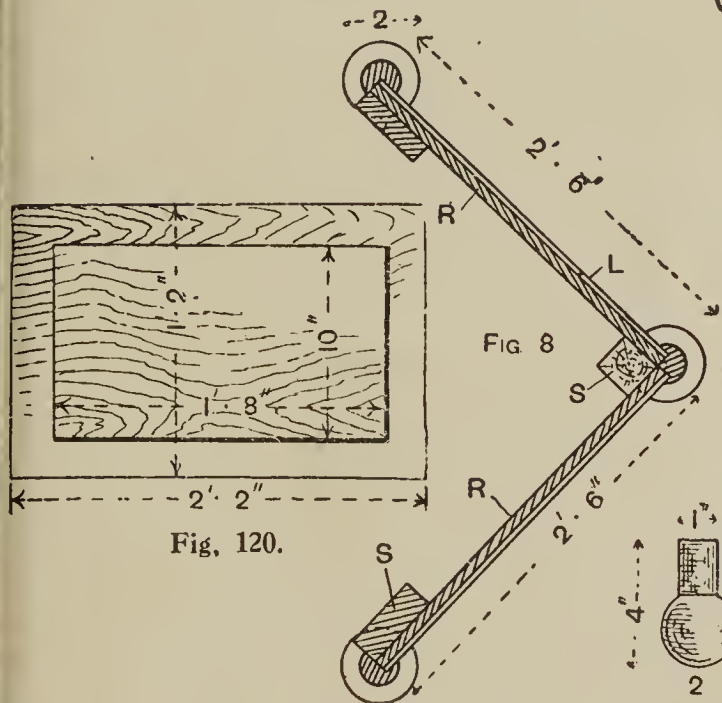


Fig. 115.

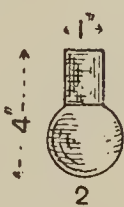


Fig. 116.

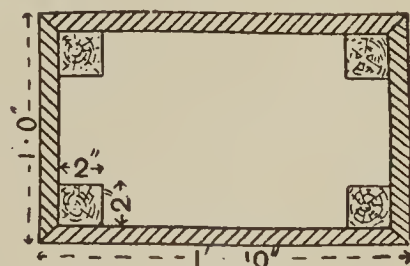


Fig. 118.

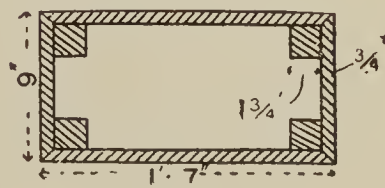


Fig. 119.

Figs. 114 to 120.—Constructional Details of "Legless Lady" Illusion.

sufficient height to prevent a possible view of the under-side of the table top, should the observer stoop and attempt to look under.

The lamp pedestals may be constructed of wood fastened together in any suitable manner, but preferably mitred. They should be painted to imitate marble on the three sides visible from the barrier; on the inner sides they should be painted to match the colour and design of the background of the apartment. Likewise, the dummy legs G and H must be painted to match the colour of the three real legs of the table.

The table, being as it is of the simplest form, does not necessitate detailed instructions on its construction. It will suffice for the worker to refer to Fig. 114 and to observe that the mirrors K may be made to slide into grooves made in the legs C, D, and E as shown. This is best done after the table is made, by sliding the plates of glass into the grooves from the bottom. Details of the table stand are shown by Figs. 115 and 116. The legs are turned on a lathe, three in number, as detailed; sizes are indicated on the drawings. The turned legs are cut out in the manner shown in the section (Fig. 115) for the reception of glass mirrors L, the back boards R acting as a support for the mirrors. Blocks S should be added to strengthen the whole. These blocks serve also as something to which the stand top B (Fig. 114) may be fixed.

A close inspection of Fig. 115 will show that the



front surface of the mirrors L comes a shade beyond the centre of the legs. The object of this is to bring the metallic surface exactly to the centre, so that portion of the legs reflected make up a perfect circle and thus give the impression of a complete leg.

When the table stand is completed it should be secured to the table top by means of screws passing up through from the under side of the table.

The two lamp pedestals are alike. The lower part is made of 1-in. deal, mitred together and strengthened by the insertion of corner blocks. The upper portion is made in a similar manner of  $\frac{3}{4}$ -in. deal. Fig. 117 shows a section of the entire pedestal. A section at v w is shown by Fig. 118, and a section through t u by Fig. 119. The top of the lower portion of the pedestal is shown by Fig. 120, and this figure also shows the top of the upper portion. Embellishments such as the ordinary O and V moulding shown at x x and the hollow y y may be added if desired, to give the apparatus a more finished appearance.

## CHAPTER XI

### Pictures: Smoke, Rag, Sand, etc.

**Smoke Pictures.**—Smoke pictures or paintings in smoke provide an excellent entertainment, and the necessary “fit up” is easily made.

A white enamelled plate is smoked by means of a torch or smoke-box, thus depositing a thin layer of soot on the surface of the plate. The picture is drawn on the plate with the first finger of the right hand. Many striking and beautiful scenes may be produced by this means, and as concisely as possible the method of drawing and making the necessary “fit up” will be explained.

Fig. 121 shows a stand which may be made up either of wood or brass rod, according to requirements. Brass rod is strongly recommended, owing to its not being liable to scorch and blacken with the heat and smoke from the torch. The brass rod can always be cleaned and looks very showy, whereas a polished or painted stand soon becomes dirty, and the worker's hands get soiled.

The stand is made up entirely of  $\frac{3}{4}$ -in. or 1-in. tubing; the seamless tube is recommended. The two legs A and B are first made; about 5 ft. 6 in. long; would be a suitable size. The top ends of the tube

should have a tapped plug sweated in (Fig. 122). The cross-bar C is next made, and in each end is

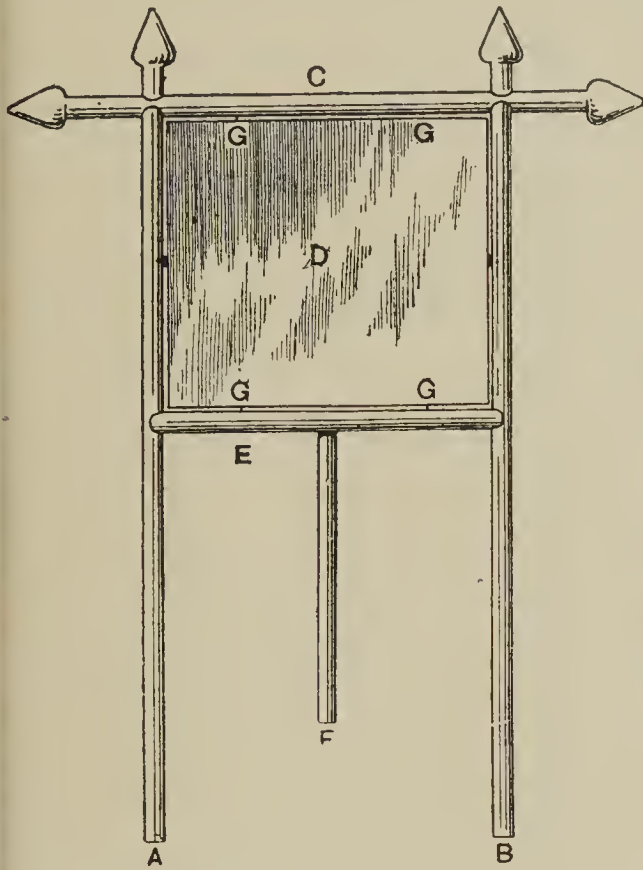


Fig. 121.



Fig. 122.

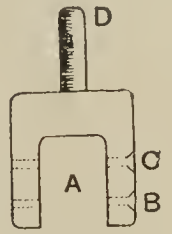


Fig. 123.

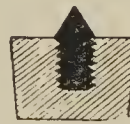


Fig. 125.

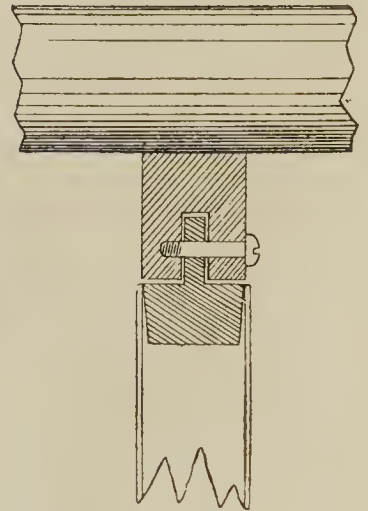


Fig. 126.



Fig. 124.

Figs. 121 to 127.  
—Details of  
Apparatus for  
Smoke Pic-  
tures.

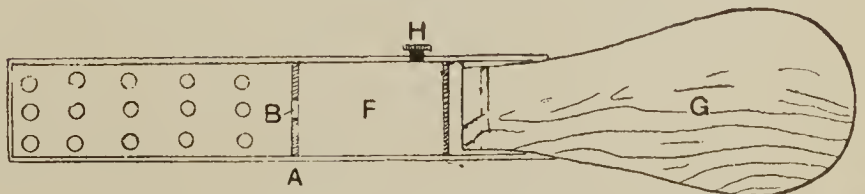


Fig. 127.

soldered a tapped plug to allow two knobs to be screwed in. The width between the legs should be determined by the size of the plate it is proposed to work with, and  $\frac{1}{2}$  in. should be left on each side for fitting.

The plate is of good-quality enamelled iron, and should be pure white. Choose a fairly thick plate, as a stout gauge is not likely to warp or buckle. Test the plate by running the hand over it. If there are any raised lumps or blisters, as they are termed, reject it, as the heat from the torch soon cracks these and renders the plate useless. The plates can be obtained in various sizes, a suitable size being 3 ft. 6 in. by 2 ft. 6 in. or 3 ft. D (Fig. 121) shows the plate; or, if preferred, two plates can be fastened together by means of a pair of iron or steel clamps (Fig. 123). The sides of the plates are placed in the jaw A. Care must be exercised to have the clamp in the exact centre of the sides. Two  $\frac{3}{16}$ -in. holes, B and C, are bored through the clamp and the enamelled plates, and riveted up. The prongs D are inserted into two holes made in the legs to receive them. Two  $\frac{3}{8}$ -in. holes are made in the cross-bar, and two knobs are screwed down on to the tapped plugs.

The bar E (Fig. 121, see also Fig. 124) keeps the whole perfectly rigid. Both ends should be filed semicircular, and beneath the lowest portion, as shown, a  $\frac{1}{4}$ -in. tapped plug is sweated. Two holes are drilled through the legs A and B, and two round-headed brass bolts inserted to tighten up the framework.

The leg F (Fig. 121) is next made, and the lower end is provided with a spiked plug (Fig. 125). If preferred, the legs A and B may be provided with these plugs. The top cross-bar and the leg F must



be provided with a hinge, and the most suitable arrangement is shown in Fig. 126.

The stand is now complete, and should be perfectly rigid and should not be lacquered. The enamelled plate should revolve easily; small brass catches at G (Fig. 121) prevent the plate moving outwards.

The method of blackening the plate is either by means of a torch or smoke-box. The latter is the best; but both methods will be explained. The torch (Fig. 127) is made from a piece of 1-in. brass tube 12 in. long. Four inches from one end is closely perforated with holes  $\frac{1}{8}$  in. in diameter; the bottom is closed with a plug brazed in. The whole of the 4 in. is packed with asbestos wool. A disc of brass A having a hole B  $\frac{1}{16}$  in. in diameter through the centre of it closes the apartment. The part F is an oil chamber closed with a disc at the top, and the handle G inserted. A small plug H is inserted into a tapped hole, and the oil is filled through this into the chamber. The oil soaks through the hole into the asbestos, and when lighted causes a dense black smoke.

A very pretty and startling effect may be produced by causing an ordinary smoked picture to become illuminated, especially if the scene be adaptable to either day or night.

The secret lies in using a piece of opal (white) glass in place of the usual enamelled-iron plate. The glass will not crack if the flame is not kept in con-

tact with it for any length of time ; in fact, the proper way is only to allow the smoke to reach the plate. Fig. 128 shows a plan of the arrangement.

The smoke-box (Fig. 129) is, however, the best and cleanest method. Procure a flat circular box ; a flat salmon tin is very suitable. A flat base is soldered to it, and four holes bored round it. A wooden holder, similar in shape to a child's battle-dore, is made, and the box screwed to it. It is painted dead black. The box should have a lip round the top edge to prevent the liquid splashing out. The box is filled with a powder composed of albo-carbon 6 parts, camphor 1 part, and gum benzoin 1 part. When lighted the powder throws off a dense smoke ; the powder, however, becomes liquid, but quickly solidifies on cooling again.

Everything is now ready for painting the picture, and if the hints are carefully followed, the beginner will have little or no difficulty in turning out some excellent work.

Beyond a short piece of stick and a small brush, no tools are required for the work. The stick is an ordinary skewer sharpened at one end and wedge-shaped at the other. The brush is a common paste brush of the large size, the stiffer the bristles the better.

Fig. 130 shows a finished picture, a seascape, and Fig. 131 shows the picture not quite half finished. It must be noted that there are only two colours at command, black and white. It is, however, by the

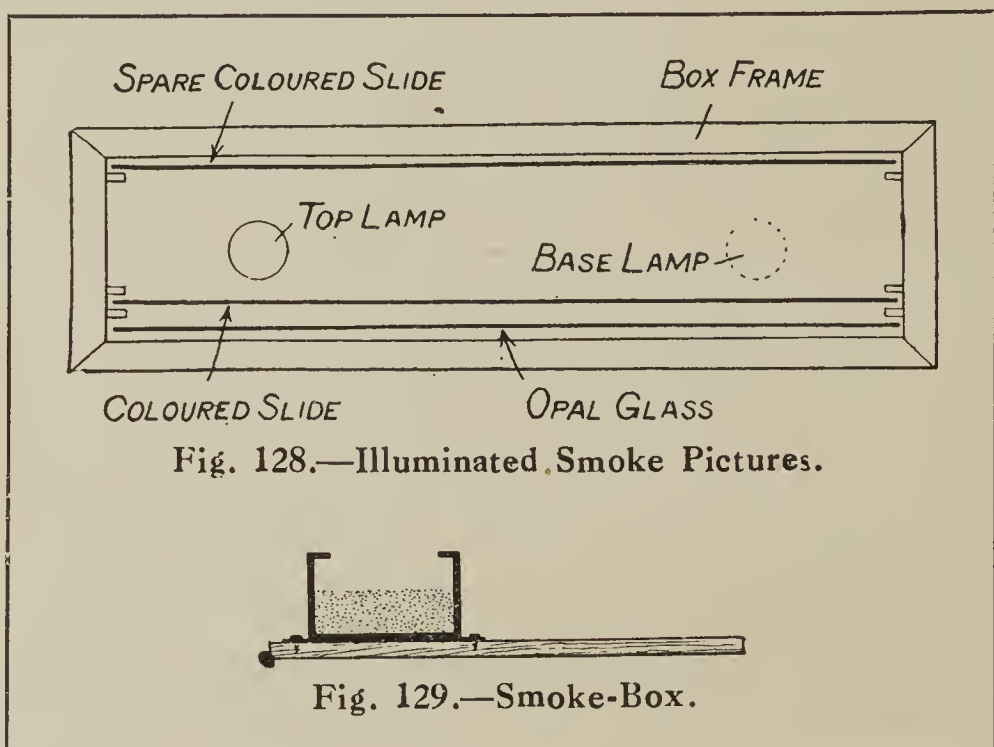
use of the brush that another colour, grey, can be used solely for making shadows and toning up and shading. In many cases the black is used as a negative and the white as a positive. A reference to the illustration will make everything clear.

In the case of the example shown by Fig. 130, the moon is placed in first. The land and the lighthouse are put in next, and this is done with the first finger of the right hand (*see* Fig. 131). A line is next made across the plate with the pointed end of the stick to represent the dividing line between the sea and sky ; this line should only be a faint one. The boat should be outlined next, and this is the most difficult part of the picture. Note the half-finished appearance of the boat in Fig. 131. The mainsail is first marked out with the flat end of the stick, and the finger takes out the inside. The front sail is then marked out, thus leaving a space between them.

The small topsail is then taken out ; *see* Fig. 131, which is exactly how it should appear at this stage. The finger then begins on the outside, first at the mast-head as shown by a white streak, and take the outline out, leaving the sails in view, but intercepted by a fine black line. This is continued all round the portion marked out to represent the hull of the boat. The result is the rough but excellent, from a spectator's point of view, design of a sailing ship.

If desired the worker may run round the outline with the flat end of the stick ; but practice will soon show that a fine straight line can be made with the

finger. The outline of the ship, however, is very fine, and therefore some excuse is offered for the use of a stick. The hull is now definitely described. The next is to place in the shadow of the boat, and properly to do this some of the water must be taken out. This is shown by the two elongated white patches which leave a wedge-shaped black mass beneath the



boat. This is now toned off with the brush. Use the brush with a dabbing motion, and trim off the shape with the first finger as the proper shade and shape come into view.

Now take out the water, and leave in only those portions requiring to be shaded. Dab these out with the brush until they resemble only the shadows of the waves and water. The outside of the lighthouse now requires attention. It is divested of its black



surroundings, except two wedge-shaped pieces, which are, of course, the rays of the lantern. These are then dabbed out with the brush. The holes are placed in



Fig. 130.—The Finished Picture.

the lighthouse itself by means of the blunt end of the stick, and the inside erased with the flat end of the little finger. The lantern is put in by means of three

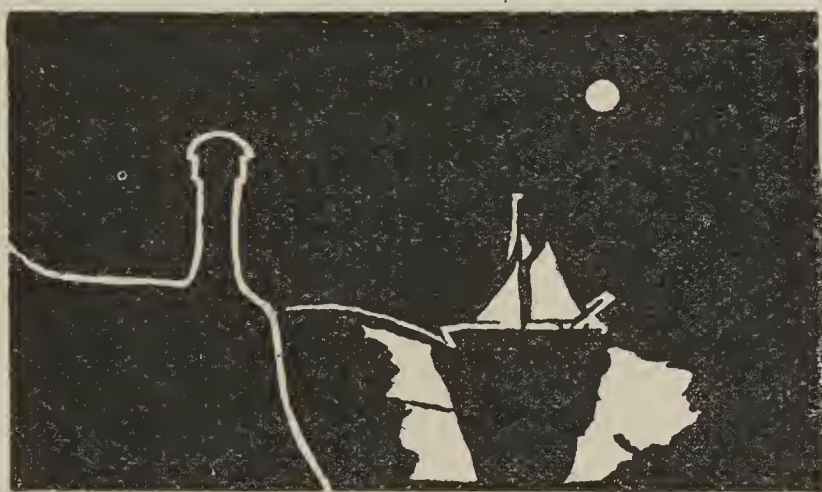


Fig. 131.—Half-finished Picture.

strokes of the finger. The audience will now probably begin to see the outlining of a picture.

The white is next taken from the sky, the clouds being left in until the last. Leave a dark ring round

the moon, and gradually work up the clouds with the brush. The moon will appear to be emerging from the clouds, and no description can give the real effect when actually seen on the plate. It is the contrast of colours which shows up the moon as if it were actually standing out from behind the clouds. The picture is then finished.

**Rag Pictures.**—All that is required in the way of a fit-up in this case is a steady easel and a few boards, as explained later. If a public entertainment be contemplated, each picture should be separately arranged on a special easel with a frame combined.

For professional purposes various mechanical and trick devices are brought into use to add to the effect of the show. If the amateur cares to go to a little trouble, he can obtain a board 30 in. by 40 in. Place one of the 20-in. by 30-in. boards (described later on) to the centre of the larger board, and round the smaller board nail or screw four narrow strips of wood forming a kind of well, into which the smaller board fits loosely. Then paint the outer edge of the large board with ebony-stained varnish, afterwards decorating it with gold to taste. Gild the raised-up strips and stain the inside of the well black. Arrange an easel so that it may be fastened to the boards with thumbscrews. Make all the boards of a uniform size to fit into the well, and after each item remove the used board and replace with the next one required (see Fig. 132).

**Hobble Skirt.**—For this a blackboard or other

suitable background, size about 20 in. by 30 in., is shown, placed on an easel, on which is built up piece by piece the figure shown in Fig. 133, an explanation of which is as follows: A is a lady's stocking of some striking colour fastened to the board with drawing-pins at the toe, heel and top opening. Fastened inside the top is an illustration of a pair of boots cut from a boot-dealer's catalogue. B is a baby's sock (smallest size obtainable), to which is attached a small piece of silk representing a glove. C is a chain purse representing a lady's handbag. D is a toy-dog with leash. E is a cardboard shape painted a bright red. This is first placed in an inverted position somewhere near with F, which is a large leaf as plant and plant-pot (*aspidistra*, say, for example), afterwards forming the hat and feather.

**Seascape.**—For this a board is required 20 in. by 30 in., which should be painted a dark blue. A piece of green baize similar to billiard-table covering (smooth in order to take chalk marks), a piece of cardboard cut to shape to represent the pier, another to represent the ship (or a toy ship can be used, one side of which has been planed flat), another piece of cardboard painted to represent the lighthouse (here, again, if obtainable, a small toy lighthouse can be used, planing one side flat), are also required. The dial from a toy watch reversed represents the moon.

The pieces are put on in the following order: Green cloth for sea, the pier, the lighthouse, the moon, chalk marks for the waves and clouds, and the ship.



The articles are secured to the board with drawing-pins permanently fixed to the back of each (*see* Fig. 134).

**Lightning Sketches.**—Make a board 20 in. by 30 in., and paint it with aluminium paint. Next get a box of tin or wood about 10 in. long and 8 in. in width, also six small tins or pots to fit inside the box. Into each of the tins or pots put one of the following colours, starting from the left in the following order (the colours are the ordinary dry-powder colours sold at oil-and-colour stores): Yellow chrome, orange chrome, light blue, indian red, dropblack or lamp-black, and flake white. Also obtain five fair-size good paint brushes, also two smaller sizes for making thick lines. Mix the dry colours with a little water to about the constituency of thick cream, or until a liquid that will spread easily but will not run is obtained.

When ready to begin the picture, put a large brush into each of the colours except the white; into the white put a small brush, also a small one into the black along with the larger one. Set the board upon an easel, which must be firm. Begin painting with the yellow from the top, then the orange chrome to about two-thirds down the board, blending the colours to form a sunset sky. Put a few dashes of each colour on to the bottom portion of the board, finishing this with blue to represent water. Now with indian red put in the mountains and shadows. Next, with black the foreground, the man fishing, fences, etc. To



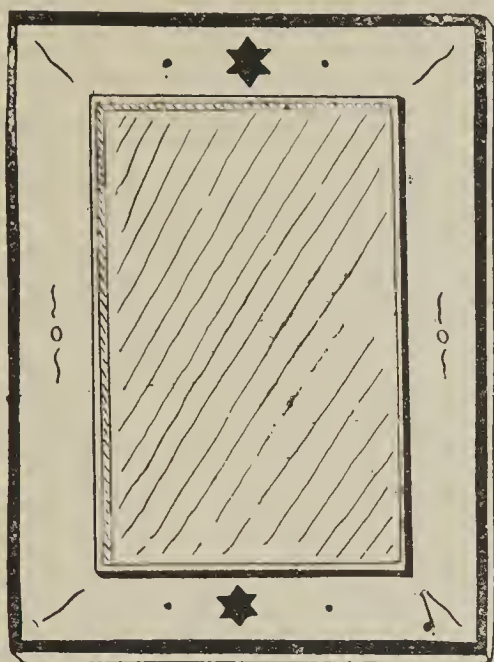


Fig. 132.

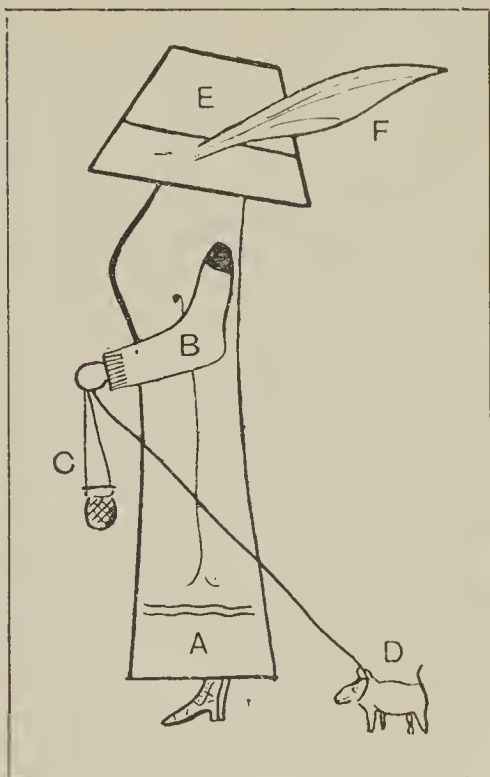


Fig. 133.

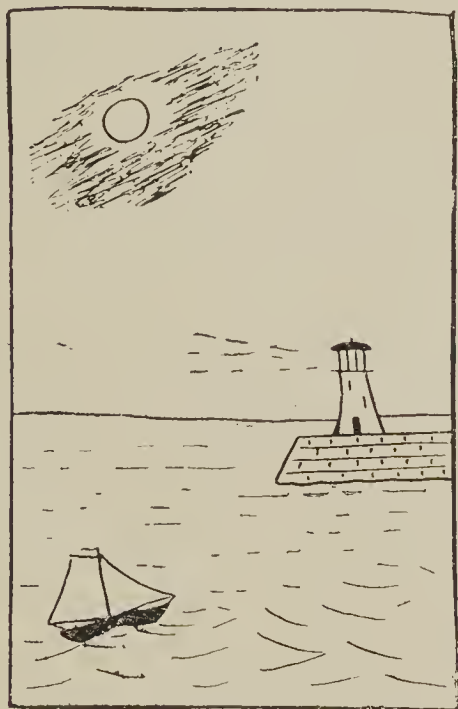


Fig. 134.



Fig. 135.

Figs. 132 to 135.—Examples of Rag or Pieced-up Pictures.

make the foliage of the trees and bushes, dab the colour (black) on the board with the end of the brush. Put in the sail of the boat with white, not forgetting the reflection in the water. Lastly, put in the hull of boat and birds with the small brush (black). (*See Fig. 135.*)

**Sand Pictures.**—The making of pictures in sand is not suitable for drawing-room performances ; but for concert and stage performances they are always greatly appreciated, especially if novel features are introduced.

The fit-up need not be at all expensive, the principal requirement being a wooden easel on which a frame can revolve. These may be purchased from any artists' colourman for a few shillings. The frame should be 2 in. wide and any size suitable, a general size being 36 in. by 42 in. A piece of  $\frac{1}{8}$ -in. three-ply wood should be covered with black velvet, taking care that every part is flat. It should swivel by means of a pivot to the easel.

Another class of frame is that known professionally as "sand-boards" (*see Fig. 136*). These are ordinary frames A ; but the two top corners are each provided with a circular iron plate B having a hole into which screws a brass rod c 12 in. long. Another rod D slides up this one, and at its end is hinged a base-plate E made from cast-iron. A brass collar F and wing-nut G controls the extension. The two front corners may, if desired, be provided with two short fancy feet H made from brass tube having ball

ends. This raises the end up a few inches, and allows the audience to see beneath the picture. Some performers prefer a plain three-ply board blacked with a dead black paint and afterwards varnished. A coating of paraffin wax is then rubbed on it, and it is quite ready for working.

Natural sand can be obtained in four colours: white, yellow, brown, and red. White sand is in two grades, rough and fine. The former is useless; the latter is that generally used. Yellow sand is that used by stablemen, and is a very good sand to work with, being exceedingly fine and of a bright yellow colour. Brown sand is the common seashore variety, obtainable from all builders and merchants. Red sand is similar to that used by ironfounders; common sandstone ground up is too coarse in grain, and is not the proper colour. Use the soft red sand, and if necessary grind it by means of an old coffee grinder kept for the purpose.

Coloured sands are made by boiling the sand in water in which aniline (water) colour has been put for two or three hours. The sand should not be taken out until cold. If the sand does not take the dye it will be found to be greasy. After the boiling, the sand should be put in a shallow tin, and roasted on a fire or in an oven to make it perfectly dry, and then should be stored in tins to ensure no damp getting to it.

Sand may be ground from white quartz, to be found near lead mines. This is undoubtedly the

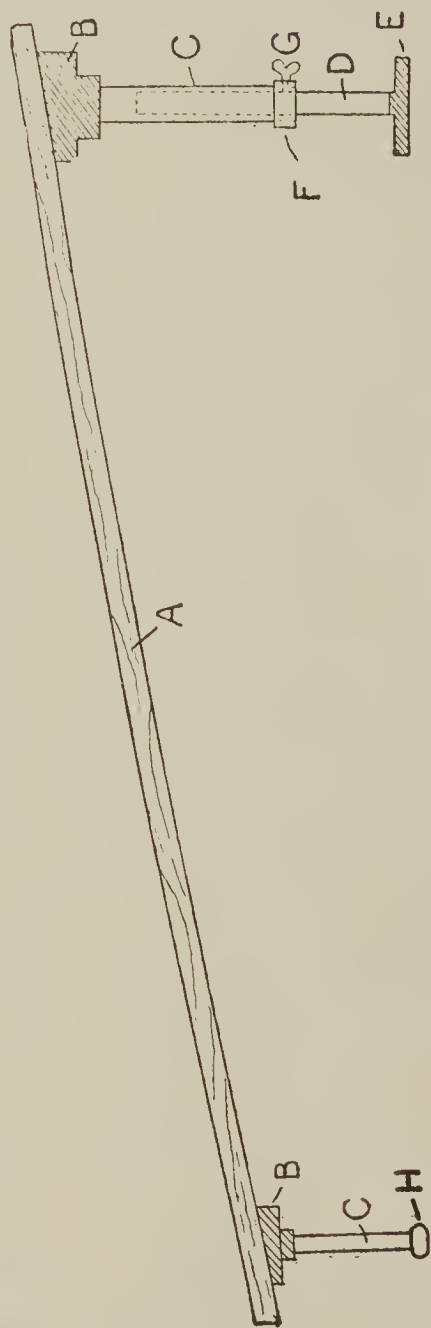


Fig. 136.—Sand Board for Sand Pictures.



Fig. 137.—Sand Torch.

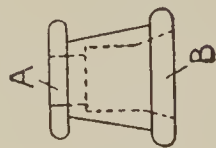


Fig. 138.—Elevation of Nozzle of Sand Torch.

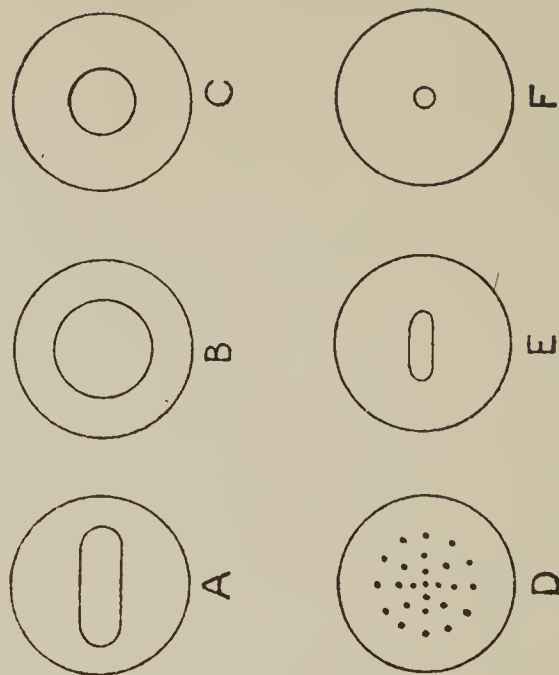


Fig. 139.—Shapes of Nozzle Tops.



finest white sand obtainable. It has a frosted appearance when ground into the finest state, and readily takes the dyes and retains its brilliancy. From the same source is also obtainable a black quartz.

A sand picture in two colours, black and white, is very striking. The board is, of course, black, and the white sand is used to bring out the picture in silhouette. Two different pictures can be made, one with the white sand in silhouette, the other making the sand the background, and therefore causing the black to create the picture. The latter is the more natural, and perhaps the more wonderful, as the audience will at once perceive that there is no possibility of a design to follow. In fact, if the drawing is executed skilfully, the spectators, even when the picture is finished, fail to see the design for a moment, until it suddenly dawns on them to look at the black portion. When two-colour pictures are being made any errors can easily be rectified by the use of the black or white sand.

Speed is an important factor in the execution of all kinds of sketch work, and sand pictures are no exception. The performer has to stand most of the time with his back to the audience, and therefore effects should follow in quick sequence.

The torch (Fig. 137) is made from thin brass tubing 12 in. long and  $1\frac{3}{4}$  in. in diameter, sufficient for the worker's fingers to grip comfortably. The top end is fitted with a brass washer  $\frac{3}{16}$  in. thick, soldered in; but the inside of the washer is threaded

to accommodate a solid plug B, having a knurled edge to enable it to be screwed on and off easily. The other end is closed with a disc of  $\frac{1}{16}$ -in. brass, and from the edge is soldered a short piece of light tube C, and an opening made to allow the sand to escape. The tube should be about 4 in. long and  $\frac{1}{2}$  in. in diameter. On the end of this is fixed a nozzle (Fig. 138) made from brass. A is the hole and B the tapered opening.

The performer should be provided with six of these nozzles, all made to fit the tube, and which are interchangeable. The shapes of the outlets vary; for instance, there are three sizes for a straight flow, each being a single hole of different diameters, usually  $\frac{1}{16}$  in.,  $\frac{1}{8}$  in., and  $\frac{3}{16}$  in. There is also a fine and medium oval-shaped hole, and another similar to a pepper-castor. The nozzles are 1 in. long, and are retained in the performer's hand whilst doing the picture. Fig. 139 shows the shapes of the nozzles. A is a large oval, B large round, C medium round, D sprinkler for flatting, E small oval, and F fine round for lines.

The torches are first filled with sand and placed upright in a wooden rack, the different colours being indicated by a piece of coloured paper gummed to the tube.

Using these torches is much easier and quicker than the hand method. The nozzle can be trailed along the board, and a line of sand is the result. If using a black velvet board, and the outline is traced across the "pile" by means of a steel needle, it can-

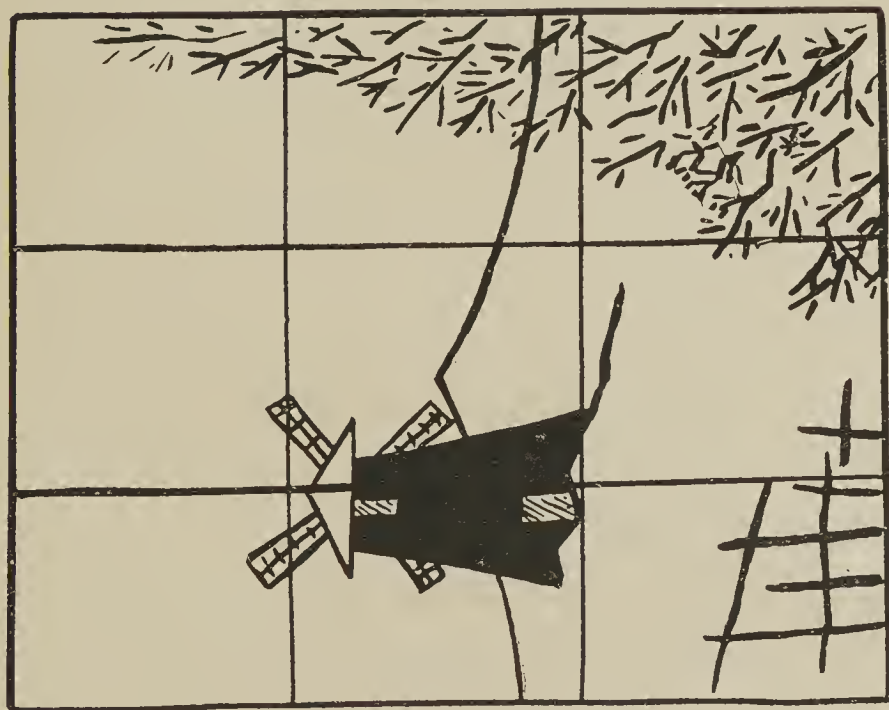


Fig. 140.—Picture made from  
Dissected Blocks.

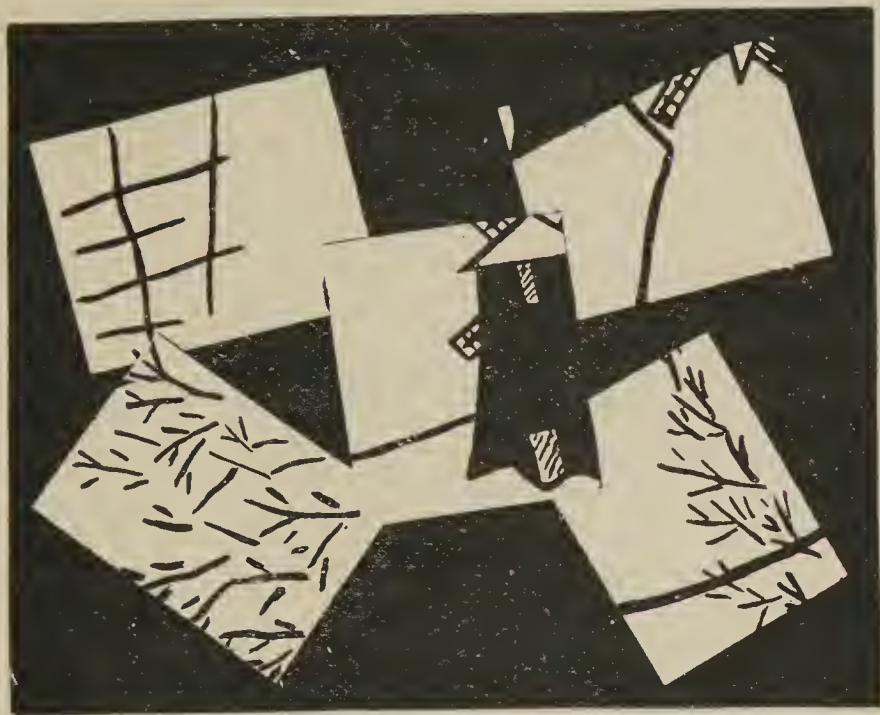


Fig. 141.—Blocks in Confusion.

not be noticed by the audience. This hint is useful to learners; those also who use the waxed boards may hold it in front of a fire, and whilst the wax is melted press on a stiff paper cut out to the design. When quite cool it can be removed, and only the performer can notice any difference.

Some performers do not use coloured sand entirely. For shading or creating fancy effects, painters' dry colours have been used, ordinary pepper-castors and powder bellows being the medium by which they are sprayed. The last named is extremely useful, and can be used for putting the "crests" or waves, moonlight shadows, and speckled effect to trees.

Mechanical effects can also be introduced according to the inventive faculty of the performer. Illuminated sand pictures are caused by having "smoked" electric bulb lamps inserted and connected up through holes in the board; the lamps being "smoked" cannot be discovered from the background. A rub with the thumb and finger before they are lit will remove the "soot."

The funnels of steamers may be made to smoke by means of smouldering wadding treated with saltpetre. By means of a trick slide or shutter sand flowers can be materialised.

**Dissected Pictures.**—This is a very effective item to introduce into a lightning-sketch exhibition.

The performer shows several small pieces of wood on which he proceeds to paint, piling up the blocks one on top of another as finished. When all the



separate pieces have been painted on, they are spread out on a board or easel, when to the surprise of the spectators a complete large picture is seen, leaving them to wonder how each section could have been done in its proper place. The secret is that the blocks are specially prepared.

Take a piece of  $\frac{3}{4}$ -in. wood of any suitable kind, saw it into, say, nine equal sections as indicated by the black lines in Fig. 140. Now paint on the board a picture with oil paints. Next coat the picture with a good hard varnish; give it three or four coats. When ready to show the feat, first give each block a coat of whitewash, obliterating all traces of the picture.

The blocks are shown to the audience in this condition. The pallet box consists of several small pots arranged in a wooden or tin box, each pot being daubed inside with a different colour. A small quantity of water is put into each receptacle. A fairly large paint brush is dipped into a pot, one of the blocks taken in the hand, and whilst pretending to paint, the whitewash is removed from each block, which are then shown to the audience.

The blocks are then arranged in proper order in a frame on the easel. To facilitate the placing in order, each block should be numbered in a spot easily seen by the performer. Fig. 140 shows the blocks put together in proper order, to make the complete picture, and Fig. 141 shows them in confusion.

## CHAPTER XII

### Paper Manipulation

**Paper Tearing.** — The paper-tearing exhibition explained below can be made with a borrowed sheet of newspaper, the preliminary cutting, folding, etc., of the paper adding to the length and interest of the entertainment, though for a stage performance sheets of printer's coloured poster paper should be used; a different coloured paper for each separate item. The papers for stage work should be cut and folded ready for use previous to appearing on the stage. The best size of paper to use is the 40-in. by 50-in. self-coloured sheets. In the large theatres sheets of paper 8 ft. or 9 ft. square are used for the mats, wheels, etc.

First make a sheet of paper square, then fold as shown in Fig. 142 at A, B, C, D and E. Next tear out the black portions shown at F and G. Open out the sheet; G will represent a ship's wheel, F will represent a cake mat or an antimacassar. Figs. 143 and 144 show these two designs when opened out and displayed on the black screen.

*Tricolour Design.*—A tri-colour patriotic design can be torn as follows: Take a red sheet of paper—say, 40 in. by 40 in.—fold as directed, but only tear the

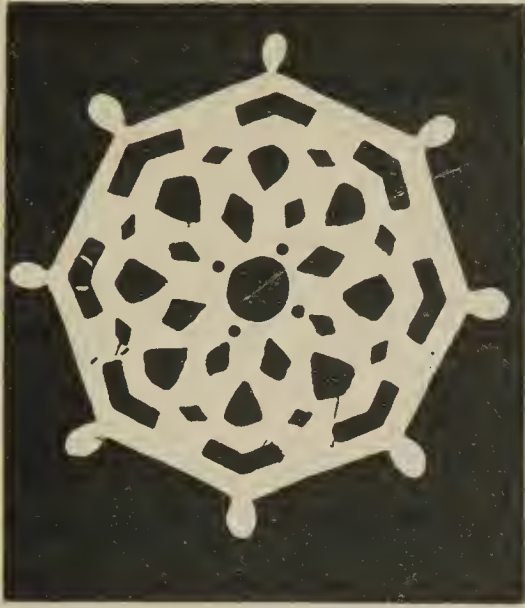


Fig. 143.—Ship's Wheel.

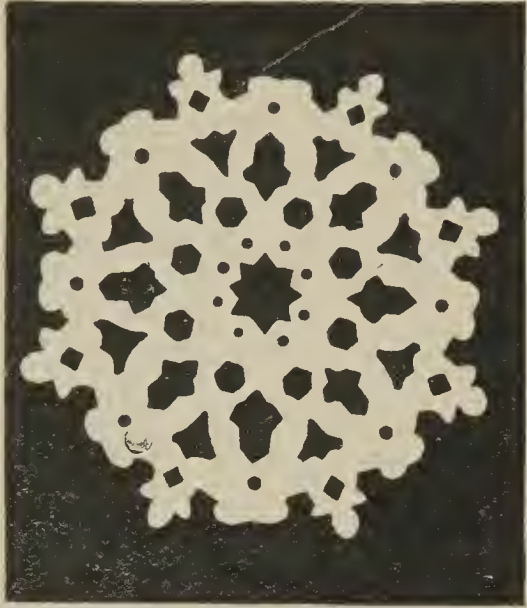


Fig. 144.—Cake Mat.



Fig. 145.—Motto Design.

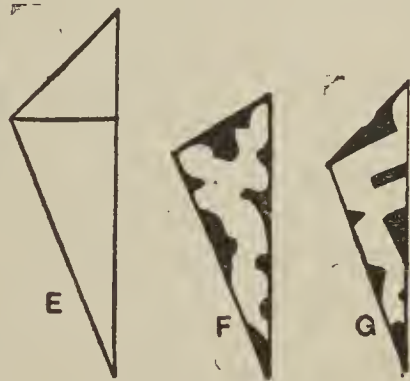
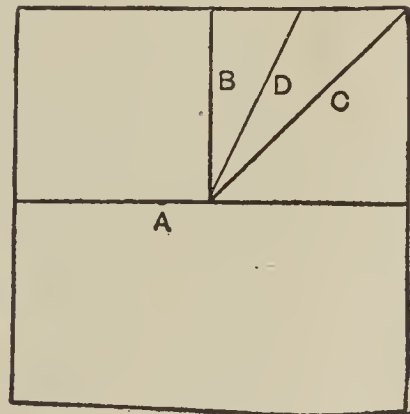


Fig. 142.—Method of Folding and Tearing Paper.

outside edge forming a red disc with a fancy border. Next take a white sheet 1 yd. square, and tear the outside edge only as before. Now take a blue sheet 2 ft. 6 in. square, and tear in the ordinary way. To display, first spread out the red disc, on top of this spread the white disc, lastly the blue design on the white. The result will be a blue design on a white ground with a red border.

*Motto.*—A motto or name, date, etc., may be apparently torn in a sheet of paper. The best way is to use an oblong sheet of paper showing the motto at the top and bottom of the paper with a design in the centre. The design should not be torn entirely out of the sheet (see Fig. 145). The motto, etc., is cut roughly with a penknife, stencil fashion, before the paper is folded, leaving just sufficient hold to keep the letters attached to the paper, then fold the paper ready for tearing. After the design is finished, tear out the letters and unfold the sheet.

By folding E (Fig. 142) once more, twice the number of perforations will appear in the finished design; or if the paper is thin enough, or the performer's fingers are strong enough, one more fold on E will give four times the number of perforations, namely, thirty-two duplications of each tear made by the performer.

*Tree.*—Make a strip of paper about 10 in. wide and 8 ft. long. Two such strips can be made from a poster sheet as before described. Green is the best colour to use for this effect. Roll up the strip from





Fig. 151.—Eastern Water Pot.

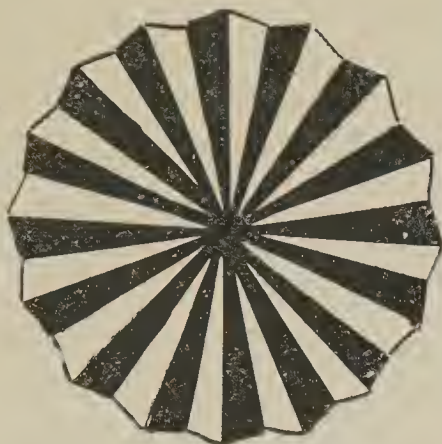


Fig. 150.—Rosette.

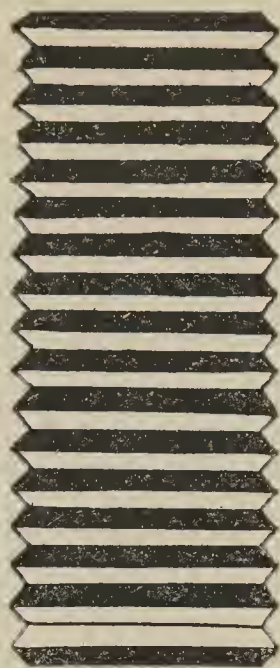


Fig. 149.—Venetian Blind.

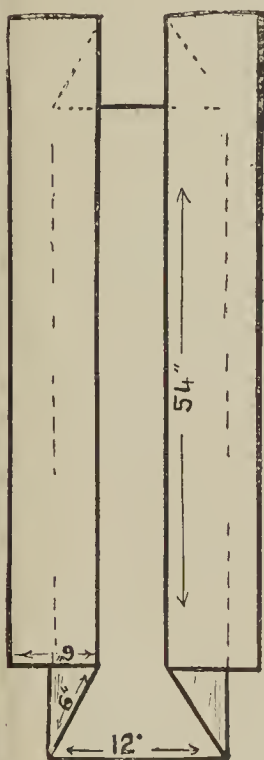


Fig. 148.—Paper creased ready for Pleating.



Fig. 146.—Paper Tree.



Fig. 147.—Mysterious Bands.

one end, making a roll of about  $1\frac{1}{2}$  in. in diameter.. Fasten the loose end lightly with gum at one corner.. This is the condition in which the paper is brought on to the stage.

When about to perform the experiment, take the roll in one hand. Tear away the gummed corner and throw out the roll, then re-roll from the opposite end.. Show that there is nothing but the roll in the hands.. Study the details given in Fig. 146. First tear the roll half-way down the entire length at the positions shown in A and B. Next bend over the loose ends as shown at C, half-way down the roll, towards the bottom end. Now pull out from the centre upwards as high as possible, when there will be a good representation of a tree as shown at D, which gives but a slight idea of the effect obtained.

If desired, the strip can be made in four different colours, say red, blue, green, and yellow. Roll from the yellow end for tearing in order to have the lightest colour at the top. The colours will thus graduate from the bottom dark to light, giving a much prettier effect than having the colours mixed haphazard.

*Mysterious Bands.*—The effect of this is that three paper bands A (Fig. 147) all alike in appearance are shown to the audience. The performer then takes a pair of scissors, and cuts each band right round the centre line of the circumference.

The surprising part of the experiment is now to be seen. The first band when cut turns out to be two single bands B. The second band, although cut

in the same way, turns out to be, instead of two bands, one large band c double the size of the original one. The third one cut in a similar fashion shows still another change, namely, two small bands the size of the original, but instead of being separate they are interlocked one within the other (*see D*).

These effects are caused by the way the bands are made; although there is a slight difference in each, to the casual observer they are exactly alike. Cut three strips of paper 2 in. wide and 4 ft. long. Take the first piece and join the two ends together to form a band or ring, using gum to secure. The band made as instructed when cut will form two separate rings. With the second one, before fastening the ends together, give one end a half turn, and when cut this forms the double-size single ring. For the third band, when securing the ends, give one end a complete turn to form the two interlocked rings.

**Paper Folding.**—This is a very effective item to introduce into an exhibition of paper manipulation. Showing a piece of white cartridge paper with a number of fanlike folds, the performer makes it into various shapes representing well-known articles. The number of shapes that can be made are about one hundred; but this would be too large a number to show before an audience.

First get a sheet of cartridge paper, 54 in. by 36 in. This is sold by the yard at any artists' colourman, costing about 1s. Mark it out into three equal divisions 12 in. wide by 54 in. long. Fold each outside



division over the centre one; then each outside division is again folded in half outwards. The paper will now appear as shown by Fig. 148. Press the creases well down, and having done so, pleat the paper as if making a fan, the pleats being made about 1 in. wide (*see* Fig. 149). Press each pleat firmly down; placing the folded paper under a heavy weight overnight will improve the working of it. Now pull the paper about in all shapes, lifting the separate folds away from each other and back again until all parts of the paper work quite loosely and independent of each other.

*Set No. 1.*—All folds being closed, bend round the two ends of the paper until they meet, then press in towards the middle, forming the rosette (*see* Fig. 150). For the table mat, still keep hold of the two ends, and spread the paper out as much as possible. Then for the church window, hold one end as for the rosette, letting the other end drop down. Show in the perpendicular position. To make the venetian blind, hold the top end straight out, and show as in Fig. 149.

*Set No. 2.*—Pull out at right angles one of the double folds. For the epaulette, close up the paper, then pull one end round as far as it will go. To form a mushroom, take hold of the double fold, pull round in the form of a circle, the body of the paper forming the stalk. The candlestick is formed by turning the last-mentioned figure upside down. To form a parachute, pull the double fold round the



reverse way to the candlestick, with the body of the paper outside.

*Set No. 3.*—Open the outside portion of the double fold at right angles to the other part. A flower vase is formed by holding the open double fold at the bottom, pulling the ends round until they meet. To form an Eastern water-pot, hold the paper with the open double fold at the top, pulling it round towards the body, and closing in the bottom end, making vase shape. This is the best figure of the entire group (*see Fig. 151*).

## CHAPTER XIII

### Making and Working a Punch and Judy Show

THE first thing is to make the main framework, which consists of four uprights (Fig. 152). These should be made from pine battens 7 ft. 6 in. long by 1 in. by  $1\frac{1}{4}$  in. planed up, and should be moderately free from knots.

For the purpose of joining up the cross-bars and making a firm job, and at the same time to allow the "fit-up" to be taken to pieces and put together again in quick time, the "catch" method is adopted. This consists of a pair of flat hooks and eyes made from  $\frac{1}{8}$ -in. brass or iron, the former for preference, as it does not rust. The catches are made to grip the battens, and are secured with 1-in. countersunk screws. The "male" catch is always fastened to the cross-bar. The illustration A (Fig. 153) shows the catch, which is merely a piece of metal bent at right angles and screwed to the narrow (1 in.) side of the batten. The "female" or socket B is similar; but has two sides at right angles and screwed to the upright, leaving only a bare  $\frac{1}{8}$ -in. space from the upright for the catch to be dropped into it.

Fig. 154 is the playboard, or, as most performers term it, the footboard. A width of 8 in. will be

found sufficient, and it should project a few inches from the sides of the framework. It will, therefore, be necessary to have it 4 ft. long and  $\frac{1}{2}$  in. thick. Two openings  $1\frac{1}{4}$  in. wide and 1 in. deep should be made to allow the board to fit flush with the inside, and it should be fixed with a pair of catches, the playboard fitting downwards into sockets x (Fig. 152),  $1\frac{1}{4}$  in. wide, which should be fixed 5 ft. 6 in. from the floor.

The front, when the bottom cross-bar and playboard are in position, is a stiff job; but will, when the proscenium is fixed, be still more substantial.

The proscenium is shown by Fig. 155. The opening should be 1 in. narrower than the framework (inside) and 1 ft. 10 in. high. The outer width should be 3 ft. 10 in., and the top should be 6 in. from the apex to the top of the opening. It is best made in  $\frac{3}{8}$ -in. four-ply wood; this thickness is not so liable to warp as thinner wood.

The back of the proscenium should be provided with two pairs of catches (Fig. 156); these engage themselves into sockets on the framework.

The sides of the framework should be joined up by two cross-bars 2 ft. 6 in. long on each side. The bottom ones are placed 1 ft. from the bottom, and the top ones should be exactly level with the top ends. The back should have two cross-bars, one 6 in. from the bottom, the other at the top.

The whole "fit-up" is now strengthened with cross bearers. These fit on the outside of the back

and two sides. The bearers (Fig. 157) are made from  $\frac{7}{8}$ -in. by  $1\frac{1}{4}$ -in. material; the length should reach within 9 in. of the cross-bars. A pair of bearers should first be cut, and then a  $\frac{3}{8}$ -in. hole bored in each corner; the positions should be marked on the framework, and holes drilled to receive bolts, washers, and wing-nuts.

When the bearers are once in position, the centre should be marked and a  $\frac{3}{8}$ -in. tenon cut on each piece. The bearers now fit closer into one another and give additional strength. These bearers should be numbered or painted in pairs to allow the performer to distinguish those required quickly. The framework is now complete. There are many additions which might be suggested, which neither add to nor detract from the interest of the performance, and these the worker will find for himself by experience.

The draperies consist of a back screen and tableau curtain, three fringes and outer hangings. The scene is painted on artists' thin canvas and nailed to a roller, which is provided with two spiked plates, or can be more simply made by driving a round wire nail in the ends, and filing off the heads. These engage into two small holes in the sides of the framework.

The tableau curtain (Fig. 158) is made from plush or velvet, and is in two halves, the top having short pieces of narrow fringe A sewn to it, and dummy cord and tassels B sewn along the centre.

The curtain is hung by means of a piece of tape C, on which the curtains slide. The ends of the tape



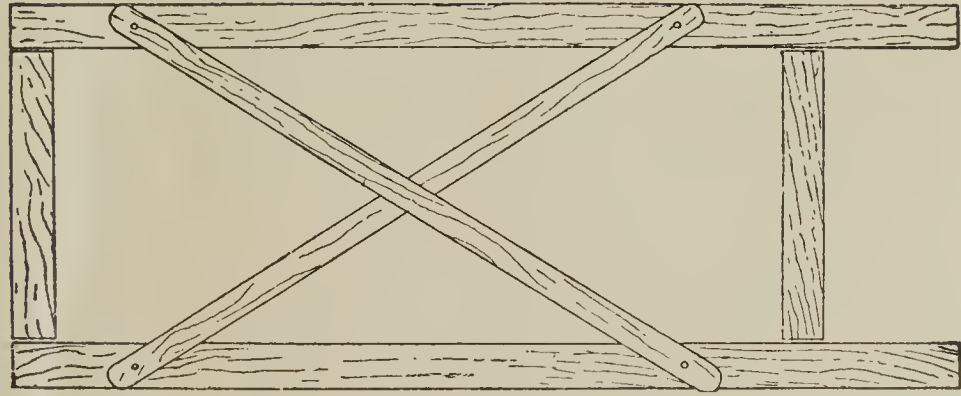


Fig. 157.—Side Framework.

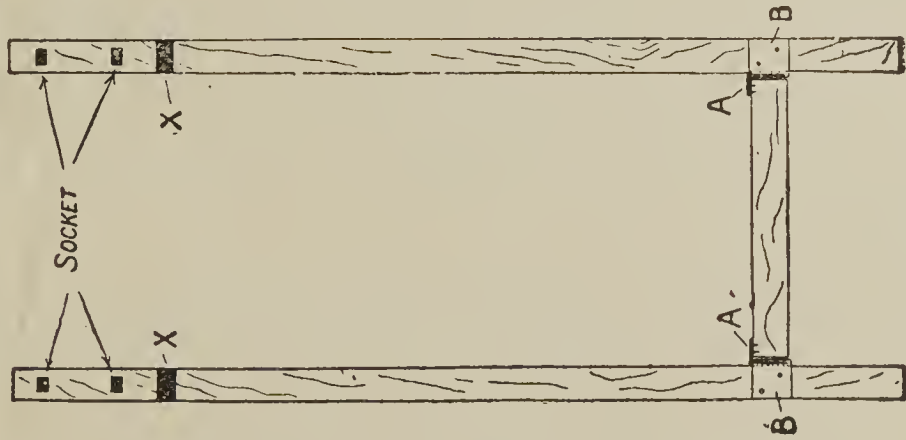


Fig. 152.—Front Framework.

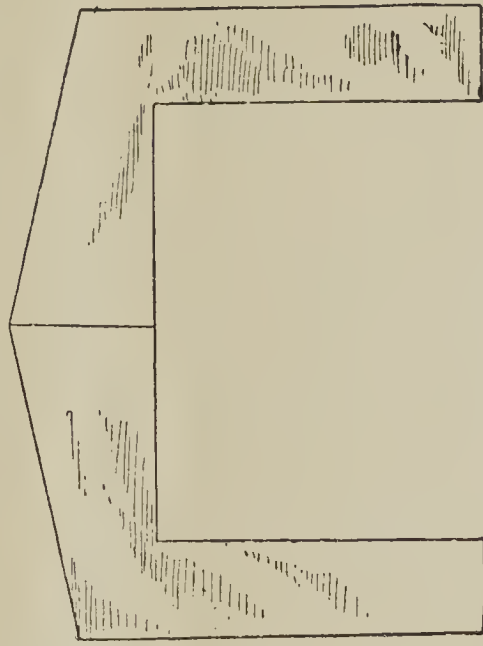


Fig. 155.—Proscenium.



Fig. 153.—Cross-bar Catch-and-Catch Socket.



Fig. 156.—Proscenium Catch Plate.

Fig. 154.—Playboard.

have two small rings D attached, and these fit over two hooks screwed into the framework and draw the tape fairly taut. The fringes are pieces of drapery the same as the curtain, having narrow fringe sewn level to the bottom; the fringes should be  $3\frac{1}{2}$  in. deep. These also are sewn to tapes with rings, and fit over staples. The outer drapery (Fig. 159) is usually cut in one piece. The edges all round are hemmed and provided with sailmaker's eyelets. These fit over small brass hooks in the framework. The drapery should hang full, and should not be tightly drawn round.

The method of putting the drapery round with the least trouble is by hooking the back first, then one side, and afterwards the other, and finally the front. If a flap is left over the eyelets, these cannot be discerned, and if deep bullion fringe is sewn to the flap level with the edge, a very pretty and pleasing job is the result.

A top is required, and this is a plain square with three sides, each having flaps and fringes. Two rings are sewn to the corners of the plain side, and hooked to cup hooks screwed in the proscenium back. The two back corners may have tapes sewn to the under-side, and tied to the framework. The fit-up is now completed.

The figures are usually eleven in number; but, of course, a fewer number will serve. They include Punch, Judy, baby, mother-in-law, rate collector, bailiff, ghost, beadle, judge, parson, hangman, etc.

The props required are usually a coffin to contain the bailiff who gets killed, a gibbet and noose intended for Punch, and with which he subsequently manages

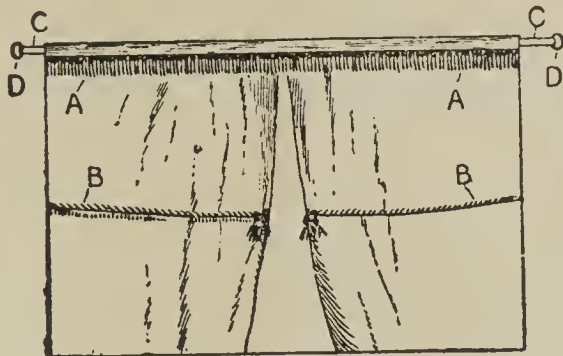
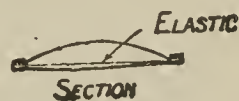


Fig. 158.—Tableau Curtain.



PLAN



SECTION

Fig. 160.—Shape of Squeaker.



CONCAVE ELASTIC

CONVEX

Fig. 161.—  
Another kind  
of Squeaker.

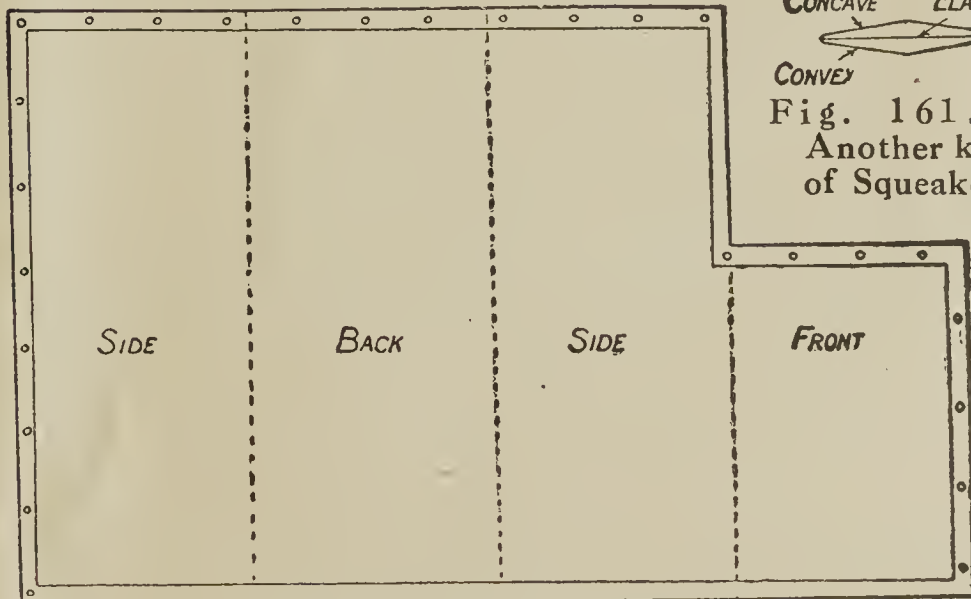


Fig. 159.—Outer Drapery.

to hang the executioner, and a solid stick 12 in. long for Punch.

The figures are best purchased from a reliable firm of conjuring apparatus manufacturers. It would, at

any rate, be a difficult task to carve Punch, and he may be purchased for a small sum. The other figures might be made, but are a deal of trouble, as they require to be made from hard wood. The figures are made hollow for the insertion of the hand.

The hands are dummy, and the performer's fingers come down the openings and grasp articles between the finger and thumb, the hands standing out horizontal. Some performers dispense with hands, or leave them at the side. The dresses of each figure have hooks sewn to them facing downwards; these are hung on hooks to the cross bearers. In this inverted position the worker can thrust his hand and bring up the figure without any fumbling.

The final requirement is the squeaker. Many performers make their own. The amateur, however, had better be guided by the choice of one from a shop. A squeaker is made by tightly drawing a piece of thin elastic over a hollow surface, and speaking through it when wedged in the top of the roof of the mouth.

The article should be shaped as in Fig. 160. It is in the form of a **U**, 1 in. long and  $\frac{7}{16}$  in. wide. It should be made in one piece, with the sides slightly concave. A piece of thin rubber ribbon  $\frac{1}{4}$  in. wide is pushed into the closed side, which is gripped and turned over with a pair of large pliers. The ribbon is then stretched, and while in this position it is again clinched with the pliers. All corners should be rounded off. Do not draw the rubber too tight, or the tone will be too shrill. Fig. 161 shows another kind of squeaker.



There is a danger of swallowing the squeaker, so that it is advisable to use one made from thin hard silver. The writer has seen squeakers with a wire or fine thread attached to a tooth. False teeth can be provided with an attachment. A piece of thread may also be attached and allowed to hang outside the mouth. A small sucker pad has also been successfully used.

To use the squeaker it is pressed to the roof of the mouth, and the voice naturally allowed to come through it. In taking a long breath, remember to allow the squeaker to come to the front of the tongue and not the back. Failure in getting the right pitch is caused by the performer not having the squeaker far enough back in the mouth. A little practice is desirable, and the exact position and necessary skill in holding it without discomfort will soon be learned. In speaking in the ordinary voice, the squeaker is pushed forwards with the tongue, and kept towards the front until required again.

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